

# Government Shivalik College Naya Nangal

Teaching Plan (Session 2022-23)

Teachers's Name –Dr. Kamlesh Kumari

Class B.Sc. Sem-I<sup>st</sup>

Paper - Cell Biology

Subject -Zoology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
29.08.22-03.09.22	Overview of Cells: Prokaryotic and Eukaryotic cells, Principle of light and electronmicroscope.class test
05.09.22-10.09.22	Plasma Membrane: Various models of plasma membrane structures, Transport across membranes: Active and Passive transport, Facilitated transport, endocytosis, exocytosis.Class test
12.09.22-17.09.22	Cell-Cell Junction structures and functions: Tight junctions, Adhesive junctions, Gap junctions.Cell Test
19.09.22-24.09.22	Structure and Functions: Endoplasmic Reticulum, Golgi Apparatus, Lysosomes, Ribosome; Vesicular transport from ER to Golgi Apparatus; Protein sorting and transport from Golgi Class Test .
26.09.22-01.10.22	Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis Mitochondrial Respiratory Chain. Class Test.
03.10.22-08.10.22	Cytoskeleton: Structure and Functions: Microtubules, Microfilaments andIntermediate filaments.Class Test
10.10.22-15.10.22	Nucleus: Structure of Nucleus: Nuclear envelope, Nuclear Pore Class Test.
17.10.22-22.10.22	Chromatin: Euchromatin and Hetrochromatin, Nucleolus.
24.10.22-29.10.22	Chemi-Osmotic Hypothesis and ATP Synthase.
31.10.22-07.11.22	Cell Division: Mitosis, Meiosis, Cell cycle and its regulation.
09.11.22-12.11.22	MST
14.11.22-19.11.22	Revision
21.11.22-26.11.22	Prokaryotic and Eukaryotic cell difference.



28.06.22-06.12.23	Class Test.
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Class B.Sc. Sem-II<sup>nd</sup>

Paper -Ecology

Subject -Zoology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
13.02.23-18.02.23	Ecological Hierarchy, Sub divisions of ecology, Relation and scope of Class Test.
20.02.23-25.02.23	Environmental Factors: Liebig's law of minimum, Shelford's law of tolerance. Class Test.
27.02.23-04.03.23	Physical factors of the environment and their effect on animals Topography, light, temperature, water, Class Test.
06.03.23-11.03.23	Population: Characteristics–Size & density, Natality, Mortality, Dispersion, Age .class test.
13.03.23-18.03.23	Biotic potential and Environment resistance, r and K. class test.
20.03.23-25.03.23	Population Dynamics & Regulation: Population Growth curves (I and J), Survivorship curves, Population cycles - Density dependent and Density independent, Regulation . Class Test.
27.03.23-01.04.23	Biotic Community: General Characteristics, Food chain (Linear and Y-shaped), Food web, Flow of Energy.
03.04.23-08.04.23	Biotic Interactions: Intra specific interactions and Inter specific interactions (Antagonism: Competition, Predation).
10.04.23-15.04.23	Parasitism, Ammensalism; Beneficial: Commensalism, Proto cooperation, Mutualism.
17.04.23-22.04.23	Wild life: Importance, need of conservation, conservation strategies, projects for endangered species, project tiger, crocodile breeding project, Gir lion sanctuary project, vulture breeding project
24.04.23-29.04.23	MST



01.05.23-13.04.23	Revision and short question answers.
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Class B.Sc. Sem-III<sup>rd</sup>

Paper Animal Physiology

Subject -Zoology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
22.08.22-27.08.22	Physiology of Digestion in the Elementry Canal, Absorption of Carbohydrates, Lipid.and
29.08.22-03.09.22	Pulmonary Ventilation, Respiratory Volumes and capacities, Bohr effects, Oxygen Diss Haemoglobin.
05.09.22-10.09.22	Transport of Oxygen and CO <sub>2</sub> , Chloride shift, control of breathing, Excretion structure of of urine formation.
12.09.22-17.09.22	Counter curent mechanism, Osmoregulation.
19.09.22-24.09.22	Cardiovesular system: Composition of blood, molecular structure and function of haem
26.09.22-01.10.22	Blood clotting, Blood group, RH factor, Cardiac cycle, electrocardiogram.
03.10.22-08.10.22	Structure and physiology of endocrine gland, Thyroid, Parathyroid, Class Test.
10.10.22-15.10.22	Pituitary, Pancreas and Gonads, Hypothalamus.
17.10.22-22.10.22	Structure of Neuron, resting membrane potential, origion of action potential and its prop
24.10.22-29.10.22	Ultra structure of skelton muscle, molecular and chemical basis of muscle contraction.
31.10.22-07.11.22	Hypertension measures, Electrocardiograms.class test.



09.11.22-12.11.22	MST
14.11.22-19.11.22	Working of Nodal Tissue, Regulations of blood pressure
21.11.22-26.11.22	Breathing Mechanism of Respiration
28.11.22-30.11.22	Saltatory conduction of nerve impulses . Class Test.

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Class B.Sc. Sem-IV<sup>th</sup>

Subject -Zoology

Paper - Evolutionary Biology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
06.02.23-11.02.23	Life's Beginnings, Chemogeny, RNA world, Biogeny, Origion of photosynthesis.
13.02.23-18.02.23	Historical Review of Evolutionary concept, Lamarckism, darwinism.
20.02.23-25.02.23	Neodarwinism, Source of variation, Heritable variations and their role.
27.02.23-04.03.23	Evidence of Evolution, Fossil records and its type, geological time scale.
06.03.23-11.03.23	Evolution of Horse, Man, Molecular evolution theories, molecular clocks. Hardy weinberg law.
13.03.23-18.03.23	Natural selection and other form of selections, role of migration and mutation in changing allele frequencies.
20.03.23-25.03.23	Genetics drift mechanism, founder effects, bottle neck phenomenon.
27.03.23-01.04.23	Product of Evolution, micro and macro evolution and isolating mechanism.
03.04.23-08.04.23	Micro evolutionary changes, mode of speciation, extinsion, mass extinsion cause and effects, K-T extinsion



10.04.23-15.04.23	Origin and evolution of man, unique hominid characteristics contrasted with primate, phylogeny, molecular analysis of human origin.
24.04.23-29.04.23	MST
01.05.23-06.05.23	Revision and short question answers.

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Class B.Sc. Sem-V<sup>th</sup>

Subject -Zoology

Paper -Developmental Biology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
22.08.22-27.08.22	Historical perspective and basic concept of development, cell-cell interaction pattern for teratogenesis their effect on development.
29.08.22-03.09.22	Early Embryonic development, gametogenesis, spermatogenesis, oogenesis, vitellogenesis mechanism and Class Test.
05.09.22-10.09.22	Types of eggs, egg membrane, polyspermy, plane and patterns of cleavage, morula, blastula. Class Test.
12.09.22-17.09.22	Late embryonic development of frog and chick upto gastrulation.
19.09.22-24.09.22	Morphogenetic movement's type and example organizer speman Man gold organiser experiment concept of induction, fate of germ layer.
26.09.22-01.10.22	Extra embryonic membranes in plntation of embryo in humans, placenta its structure phy and function of placenta.
03.10.22-08.10.22	Post embryonic development meta-morphosis changes hormonal regulation in amphibia. Test.



10.10.22-15.10.22	Re-generation: mode of regeneration, epimorphosis, morphallaxis and compensatory regeneration.
17.10.22-22.10.22	Ageing concept and its theories, control of development, fundamental process in development.
24.10.22-29.10.22	Gene activation, determination, induction, differentiation, morphogenesis, cell communication, cell movement and cell death.
31.10.22-07.11.22	Revision and short questions answers.
09.11.22-12.11.22	MST
01.11.22-06.11.22	Gastrulation in frog, Post gastrulation movement
08.11.22-13.11.22	Extra embryonic membranes in chick
15.11.22-20.11.22	Class Test
22.11.22-27.11.22	Blastulation and morula formation
29.11.22-06.12.22	Slow block to polyspermy and fast block to polyspermy . Revision.

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Class B.Sc. Sem-VI<sup>th</sup>

Subject -Zoology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
06.02.23-11.02.23	Introduction to parasitology, brief account of life history, mode of infection and pathogenicity of the pathogenic protozoans.
13.02.23-18.02.23	Brief account of life history, mode of infection and pathogenicity of the pathogenic helminthes.
20.02.23-25.02.23	Life cycle and control measure of arthropod vectors of human disease, like malaria, dengue.
27.03.23-04.03.23	Yellow fever, haemorrhagic fever, filariasis, Japanese- encephalitis.
06.04.23-11.04.23	Laboratory techniques



13.04.23-18.04.23	Haematology: collection of blood, anti coagulants, Romanowsky's stain, total RBC count.
20.04.23-25.04.23	Erythrocyte Sedimentation rate, TLC, DLC.
27.04.23-01.05.23	Eosinophilcount, platelet count, reticulocyte count.
03.05.23-08.05.23	Protein estimation, estimation of blood urea, sugar and cholesterol, serum creatinine and uric acid, urine analysis.
10.05.23-15.05.23	Estimation of protein, sugar, bilesalt, bilepigments, ketones bodies, liver function test.
17.05.23-22.05.23	Class Test
24.05.23-29.05.23	MST
01.06.23-06.06.23	Revision

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