

Government Shivalik College Naya Nangal

Teaching Plan (Session 2021-22)

Teachers's Name –Dr. Kamlesh Kumari

Class B.Sc. Sem-Ist

Paper - Cell Biology

Subject -Zoology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
1.10.21-4.10.21	Overview of Cells: Prokaryotic and Eukaryotic cells, Principle of light and electronmicroscope.class test
5.10.21-9.10.21	Plasma Membrane: Various models of plasma membrane structures, Transport across membranes: Active and Passive transport, Facilitated transport, endocytosis, exocytosis.Class test
11.10.21-16.10.21	Cell-Cell Junction structures and functions: Tight junctions, Adhesive junctions, Gap junctions.Cell Test
18.10.21-23.10.21	Structure and Functions: Endoplasmic Reticulum, Golgi Apparatus, Lysosomes, Ribosome; Vesicular transport from ER to Golgi Apparatus; Protein sorting and transport from Golgi Class Test .
25.10.21-30.10.21	Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis Mitochondrial Respiratory Chain. Class Test.
1.11.21-6.11.21	Cytoskeleton: Structure and Functions: Microtubules, Microfilaments and Intermediate filaments.Class Test
8.11.21-13.11.21	Nucleus: Structure of Nucleus: Nuclear envelope, Nuclear Pore Class Test.
15.11.21-20.11.21	Chromatin: Euchromatin and Hetrochromatin, Nucleolus.
22.11.21-27.11.21	Chemi-Osmotic Hypothesis and ATP Synthase.



29.11.21-4.12.21	Cell Division: Mitosis, Meiosis, Cell cycle and its regulation.
6.12.21-11.12.21	Class Test
13.12.21-18.12.21	Revision
20.12.21-24.12.21	Prokaryotic and Eukaryotic cell difference.
6.01.22-14.01.22	Class Test.

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Class B.Sc. Sem-IInd

Paper -Ecology

Subject -Zoology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
21.03.22-26.03.22	Ecological Hierarchy, Sub divisions of ecology, Relation and scope of Class Test.
28.03.22-02.04.22	Environmental Factors: Liebig's law of minimum, Shelford's law of tolerance. Class Test.
4.04.22-09.04.22	Physical factors of the environment and their effect on animals Topography, light, temperature, water, Class Test.
11.04.22-16.04.22	Population: Characteristics-Size & density, Natality, Mortality, Dispersion, Age .class test.
18.04.22-23.04.22	Biotic potential and Environment resistance, r and K. class test.
25.04.22-30.04.22	Population Dynamics & Regulation: Population Growth curves (I and J), Survivorship curves, Population cycles - Density dependent and Density independent, Regulation . Class Test.
2.05.22-07.05.22	Biotic Community: General Characteristics, Food chain (Linear and Y-shaped), Food web, Flow of Energy.
9.05.22-14.05.22	Biotic Interactions: Intra specific interactions and Inter specific interactions (Antagonism: Competition, Predation).



16.05.22-21.05.22	Parasitism, Ammensalism; Beneficial: Commensalism, Proto cooperation, Mutualism.
23.05.22-28.05.22	Wild life: Importance, need of conservation, conservation strategies, projects for endangered species, project tiger, crocodile breeding project, Gir lion sanctuary project, vulture breeding project
30.05.22-31.05.22	Class Test
02.06.22-06.06.22	Revision and short question answers.

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Class B.Sc. Sem-IIIrd

Paper Animal Physiology

Subject -Zoology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
17.08.21-21.08.21	Physiology of Digestion in the Elementry Canal, Absorption of Carbohydrates, Lipid.and protein. Class Test
-28.08.23.21.0821	Pulmonary Ventilation, Respiratory Volumes and capacities, Bohr effects, Oxygen Dissociation curve of Haemoglobin.
30.08.21-04.09.21	Transport of Oxygen and CO ₂ , Chloride shift, control of breathing, Excretion structure of nephron, Mechanism of urine formation.
06.09.21-11.09.21	Counter cureent mechanism, Osmoregulation.
13.09.21-18.09.21	Cardiovesular system: Composition of blood, molecular structure and function of haemoglobin .Class Test.
20.09.21-25.09.21	Blood clotting, Blood group, RH factor, Cardiac cycle, electrocardiogram.



27.09.21-02.10.21	Structure and physiology of endocrine gland, Thyroid, Parathyroid, Class Test.
04.10.21-09.10.21	Pituitary, Pancreas and Gonads, Hypothalamus.
11.10.21-16.10.21	Structure of Neuron, resting membrane potential, origion of action potential and its propagation, class test.
18.10.21-23.10.21	Ultra structure of skelton muscle, molecular and chemical basis of muscle contraction.
25.10.21-30.10.21	Hypertension measures, Electrocardiograms.class test.
01.11.21-06.11.21	Revision and short question answers.
08.11.21-13.11.21	Working of Nodal Tissue, Regulations of blood pressure
15.11.21-20.11.21	Breathing Mechanism of Respiration
22.11.21-27.11.21	Saltatory conduction of nerve impulses
29.11.21-04.12.21	Class Test
06.12.21-11.12.21	Bhohr effect, chloride shift, Transport of carbon dioxide
13.12.21-18.12.21	Revision and short questions answers
19.12.21-23.12.21	Class Test

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Class B.Sc. Sem-IVth

Subject -Zoology

Paper - Evolutionary Biology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
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21.03.22-26.03.22	Life's Beginnings, Chemogeny, RNA word, Biogeny, Origion of photosynthesis.
28.03.22-02.04.22	Historical Review of Evolutionary concept, Lamarckism, darwinism.
04.04.22-09.04.22	Neodarwinism, Source of variation, Heritable variations and their role.
11.04.22-16.04.22	Evidence of Evolution, Fossil records and its type, geological time scale.
18.04.22-23.04.22	Evolution of Horse, Man, Moleular evolution theories, molecular clocks. Hardy weinberg law.
25.04.22-30.04.22	Natural selection and other form of selections, role of migration and mutation in changing allele frequencies.
02.05.22-07.05.22	Genetics drift mechanism, founder effects, bottle neck phenomenon.
09.05.22-14.05.22	Product of Evolution, micro and macro evolution and isolating mechanism.
16.05.22-21.05.22	Micro evolutionary changes, mode of speciation, extinsion, mass extinsion cause and effects, K-T extinsion
23.05.22-28.05.22	Origion and evolution of man, unique hominid characteristics contrasted with primate, phylogeny, molecular analysis of human origin.
30.05.22-31.05.22	Class Test
01.06.22-06.06.22	Revision and short question answers.

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Class B.Sc. Sem-Vth

Subject -Zoology

Paper -Developmental Biology



<u>Dates : weekly</u>	<u>Topics which will be covered</u>
17.08.21-21.08.21	Historical perspective and basic concept of development, cell-cell interaction pattern, teratogenesis their effect on development.
23.08.21-28.08.21	Early Embryonic development, gametogenesis, spermatogenesis, oogenesis, vitelline fertilization mechanism and Class Test.
30.08.21-04.09.21	Types of eggs, egg membrane, polyspermy, plane and patterns of cleavage, morula, Class Test.
06.09.21-11.09.21	Late embryonic development of frog and chick upto gastrulation.
13.09.21-18.09.21	Morphogenetic movement's type and example organizer speman Man gold organizer concept of induction, fate of germ layer.
20.09.21-25.09.21	Extra embryonic membranes in plntation of embryo in humans, placenta its structure type and function of placenta.
27.09.21-02.10.21	Post embryonic development meta-morphosis changes hormonal regulation in amp Class Test.
04.10.21-09.10.21	Re-generation: mode of regeneration, epimorphosis, morphallaxis and compensatory
11.10.21-16.10.21	Ageing concept and its theories, control of development, fundamental process in de
18.10.21-23.10.21	Gene activation, determination, induction, differentiation, morphogenesis, cell comm movement and cell death.
25.10.21-30.10.21	Class Test
01.11.21-06.11.21	Revision and short question answers.
08.11.21-13.11.21	Gastrulation in frog, Post gastrual movement
15.11.21-20.11.21	Extra embryonic membranes in chick
22.11.21-27.11.21	Class Test
20.11.21-04.12.21	Blastulation and morula formation
06.12.21-11.12.21	Slow block to polyspermy and fast block to polyspermy
13.12.21-18.12.21	Revision

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Class B.Sc. Sem-VIth

Subject -Zoology

<u>Dates : weekly</u>	<u>Topics which will be covered</u>
21.03.22-26.03.22	Intoduction to parasitology, brief account of life history, mode of infection and pathogenicity of the pathogenic protozoans.
28.03.22-02.04.22	Brief account of life history, mode of infection and pathogenicity of the pathogenic helminthes.
04.04.22-09.04.22	Life cycle and control measure of arthropod vectors of human disease, like malaria, dengu.
11.04.22-16.04.22	Yellow fever, haemorrhajic fever, filariasis, japanese- encephalitis.
18.04.22-23.04.22	Laboratory techniques
25.04.22-30.04.22	Haematology: collection of blood, anti coagulants, Romanowsky's stain, total RBC count.
02.05.22-07.05.22	Erythrocyte Sedimentation rate, TLC, DLC.
09.05.22-14.05.22	Eosinophilcount, platelet count, reticulocyte count.
16.05.22-21.05.22	Protein estimation, estimation of blood urea, sugar and cholesterol, serum creatinine and uric acid, urine analysis.
23.05.22-28.05.22	Estimation of protein, sugar, bilesalt, bilepigments, ketones bodies, liver function test.
30.05.22-31.05.22	Class Test
01.06.22-06.06.22	Revision and short question answers.

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