

Government Shivalik College Naya Nangal

Teaching Plan (Session 2020-21)

Teachers's Name –Dr. Kamlesh Kumari

Class B.Sc. Sem-Ist

Subject -Zoology

| <u>Dates : weekly</u> | <u>Topics which will be covered</u> |
|----------------------------|---|
| 1 Sept. to 5 Sept. | Overview of Cells: Prokaryotic and Eukaryotic cells, Principle of light and electronmicroscope. |
| 7 Sept. to 12 Sept. | Plasma Membrane: Various models of plasma membrane structures, Transport across membranes: Active and Passive transport, Facilitated transport, endocytosis, exocytosis. |
| 14 Sept. to 19 Sept. | Cell-Cell Junction structures and functions: Tight junctions, Adhesive junctions, Gap junctions. |
| 21 Sept. to 26 Sept. | Structure and Functions: Endoplasmic Reticulum, Golgi Apparatus Lysosomes, Ribosome; Vesicular transport from ER to Golgi Apparatus Protein sorting and transport from Golgi Apparatus. |
| 28 Sept. to 3 October | Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis Mitochondrial Respiratory Chain. |
| 5 October to 10 October | Cytoskeleton: Structure and Functions: Microtubules, Microfilaments and Intermediate filaments. |
| 12 October to 17 October | Nucleus: Structure of Nucleus: Nuclear envelope, Nuclear Pore Complex. |
| 19 October to 24 October | Chromatin: Euchromatin and Hetrochromatin, Nucleolus. |
| 26 October to 31 October | Chemi-Osmotic Hypothesis and ATP Synthase. |
| 16 November to 21 November | Cell Division: Mitosis, Meiosis, Cell cycle and its regulation. |
| 23 November to 28 November | Class Test |
| 30 November to 5 December | Revision and short question answers. |

Kamlesh

Dr. Kamlesh Kumari
Department of Zoology

Government Shivalik College Naya Nangal

Teaching Plan (Session 2020-21)
Teachers's Name –Dr. Kamlesh Kumari

Class B.Sc. Sem-IInd

Subject -Zoology

| <u>Dates : weekly</u> | <u>Topics which will be covered</u> |
|-----------------------|--|
| 1 Feb. to 6 Feb. | Ecological Hierarchy, Sub divisions of ecology, Relation and scope of Ecology. |
| 8 Feb. to 13 Feb. | Environmental Factors: Liebig's law of minimum, Shelford's law of tolerance. |
| 15 Feb. to 20 Feb. | Physical factors of the environment and their effect on animals Topography, light, temperature, water, Humidity. |
| 22 Feb. to 27 Feb. | Population: Characteristics–Size & density, Natality, Mortality, Dispersion, Age structure. |
| 1 March to 6 March | Biotic potential and Environment resistance, r and K strategies. |
| 8 March to 13 March | Population Dynamics & Regulation: Population Growth curves (I and J), Survivorship curves, Population cycles - Density dependent and Density independent, Regulation of population. |
| 15 March to 20 March | Biotic Community: General Characteristics, Food chain (Linear and Y-shaped), Food web, Flow of Energy. |
| 22 March to 27 March | Biotic Interactions: Intra specific interactions and Inter specific interactions (Antagonism: Competition, Predation). |
| 29 March to 3 April | Parasitism, Ammensalism; Beneficial: Commensalism, Proto cooperation, Mutualism. |
| 5 April to 10 April | Wild life: Importance, need of conservation, conservation strategies, projects for endangered species, project tiger, crocodile breeding project, Gir lion sanctuary project, vulture breeding project |
| 12 April to 17 April | Class Test |
| 19 April to 24 April | Revision and short question answers. |

Kamlesh

Dr. Kamlesh Kumari
Department of Zoology

Government Shivalik College Naya Nangal

Teaching Plan (Session 2020-21)
Teachers's Name –Dr. Kamlesh Kumari

Class B.Sc. Sem-VIth

Subject -Zoology

| <u>Dates : weekly</u> | <u>Topics which will be covered</u> |
|-----------------------|---|
| 1 Feb. to 6 Feb. | Intoduction to parasitology, brief account of life history, mode of infection and pathogenicity of the pathogenic protozoans. |
| 8 Feb. to 13 Feb. | Brief account of life history, mode of infection and pathogenicity of the pathogenic helminthes. |
| 15 Feb. to 20 Feb. | Life cycle and control measure of arthropod vectors of human disease, like malaria, dengu. |
| 22 Feb. to 27 Feb. | Yellow fever, haemorrhajic fever, filariasis, japanese- encephalitis. |
| 1 March to 6 March | Laboratory techniques |
| 8 March to 13 March | Haematology: collection of blood, anti coagulants, Romanowsky's stain, total RBC count. |
| 15 March to 20 March | Erythrocyte Sedimentation rate, TLC, DLC. |
| 22 March to 27 March | Eosinophilcount, platelet count, reticulocyte count. |
| 29 March to 3 April | Protein estimation, estimation of blood urea, sugar and cholesterol, serum creatinine and uric acid, urine analysis. |
| 5 April to 10 April | Estimation of protein, sugar, bilesalt, bilepigments, ketones bodies, liver function test. |
| 12 April to 17 April | Class Test |
| 19 April to 24 April | Revision and short question answers. |

Kamlesh

Dr. Kamlesh Kumari
Department of Zoology

Government Shivalik College Naya Nangal

Teaching Plan (Session 2020-21)

Teachers's Name –Dr. Kamlesh Kumari

Class B.Sc. Sem-Vth

Subject -Zoology

| <u>Dates : weekly</u> | <u>Topics which will be covered</u> |
|----------------------------|--|
| 1 Sept. to 5 Sept. | Historical perspective and basic concept of development, cell-cell pattern formation, teratogenesis their effect on development. |
| 7 Sept. to 12 Sept. | Early Embryonic development, gametogenesis, spermatogenesis, vitellogenesis, fertilization mechanism and significance. |
| 14 Sept. to 19 Sept. | Types of eggs, egg membrane, polyspermy, plane and patterns of cleavage, morula, blastula and its type. |
| 21 Sept. to 26 Sept. | Late embryonic development of frog and chick upto gastrulation. |
| 28 Sept. to 3 October | Morphogenetic movement's type and example organizer speman organizer experiment, concept of induction, fate of germ layer. |
| 5 October to 10 October | Extra embryonic membranes in plntation of embryo in humans, p structure physiology, type and function of placenta. |
| 12 October to 17 October | Post embryonic development meta-morphosis changes harmonal in amphibians and insects. |
| 19 October to 24 October | Re-generation: mode of regeneration, epimorphosis, morphallax compensatry regeneration. |
| 26 October to 31 October | Ageing concept and its theories, control of development, fundan process in development. |
| 16 November to 21 November | Gene activation, determination, induction, differntiation, morph communication, movement and cell death. |
| 23 November to 28 November | Class Test |
| 30 November to 5 December | Revision and short question answers. |

Kamlesh

Dr. Kamlesh K
Department of Zo

Government Shivalik College Naya Nangal

Teaching Plan (Session 2020-21)

Teachers's Name –Dr. Kamlesh Kumari

Class B.Sc. Sem-IVth

Subject -Zoology

| <u>Dates : weekly</u> | <u>Topics which will be covered</u> |
|-----------------------|--|
| 1 Feb. to 6 Feb. | Life's Beginnings, Chemogeny, RNA word, Biogeny, Origion of photosynthesis. |
| 8 Feb. to 13 Feb. | Historical Review of Evolutionary concept, Lamarckism, darwinism. |
| 15 Feb. to 20 Feb. | Neodarwinism, Source of variation, Heritable variations and their role. |
| 22 Feb. to 27 Feb. | Evidence of Evolution, Fossil records and its type, geological time scale. |
| 1 March to 6 March | Evolution of Horse, Man, Moleular evolution theories, molecular clocks. Hardy weinberg law. |
| 8 March to 13 March | Natural selection and other form of selections, role of migration and mutation in changing allele frequencies. |
| 15 March to 20 March | Genetics drift mechanism, founder effects, bottle neck phenomenon. |
| 22 March to 27 March | Product of Evolution, micro and macro evolution and isolating mechanism. |
| 29 March to 3 April | Micro evolutionary changes, mode of speciation, extinsion, mass extinsion cause and effects, K-T extinsion |
| 5 April to 10 April | Origion and evolution of man, unique hominid characteristics contrasted with primate, phylogeny, molecular analysis of human origin. |
| 12 April to 17 April | Class Test |
| 19 April to 24 April | Revision and short question answers. |

Kamlesh

Dr. Kamlesh Kumari
Department of Zoology

Government Shivalik College Naya Nangal

Teaching Plan (Session 2020-21)

Teachers's Name –Dr. Kamlesh Kumari

Class B.Sc. Sem-IIIrd

Subject -Zoology

| <u>Dates : weekly</u> | <u>Topics which will be covered</u> |
|----------------------------|---|
| 1 Sept. to 5 Sept. | Physiology of Digestion in the Elementary Canal, Absorption of Carbohydrates, Lipid, Proteins. |
| 7 Sept. to 12 Sept. | Pulmonary Ventilation, Respiratory Volumes and capacities, Bohr effects, Oxygen Dissociation curve of Haemoglobin. |
| 14 Sept. to 19 Sept. | Transport of Oxygen and CO ₂ , Chloride shift, control of breathing, Excretion structure of nephron, Mechanism of urine formation. |
| 21 Sept. to 26 Sept. | Counter current mechanism, Osmoregulation. |
| 28 Sept. to 3 October | Cardiovascular system: Composition of blood, molecular structure and function of haemoglobin. |
| 5 October to 10 October | Blood clotting, Blood group, RH factor, Cardiac cycle, electrocardiogram. |
| 12 October to 17 October | Structure and physiology of endocrine gland, Thyroid, Parathyroid, Adrenal. |
| 19 October to 24 October | Pituitary, Pancreas and Gonads, Hypothalamus. |
| 26 October to 31 October | Structure of Neuron, resting membrane potential, origin of action potential and its propagation, synapse. |
| 16 November to 21 November | Ultra structure of skeletal muscle, molecular and chemical basis of muscle contraction. |
| 23 November to 28 November | Class Test |
| 30 November to 5 December | Revision and short question answers. |

Kamlesh

Dr. Kamlesh Kumari
Department of Zoology