DELHI PUBLIC SCHOOL, DHENKANAL

Session 2026 - 2027

Class-XII SCIENCE

Month	SUBJECT	Topics
MARCH / APRIL	ENGLISH	Flamingo: • My Mother at Sixty-Six, • The Last Lesson . Vistas: • The Third Level Creative Writing: Notice
	MATH	• Relations and Functions • Inverse Trigonometric Functions • Matrices(Continued)
	PHYSICS	• Electric Charges and Field & Electric potential and capacitance
	CHEMISTRY	**Induction & Bridging: Introduction towards syllabus pattern,Blue print of Q/P. NO. of copies,exams etc.(1-Period)** **Lesson-1 : Solutions :** Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, **Exp : Introduction for practical examinations.** **Lesson - 1** : **Solution - Colligative properties** - Relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor. **Lesson-06 : Haloalkanes & Haloarenes : Haloalkanes**: Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions. **Exp: Detection of acid & basic radicals for a given salt – $BaCl_2$** **(If practical classes assigned in TT)**
	BIOLOGY	**Induction & Bridging: Introduction towards syllabus pattern,Blue print of Q/P. NO. of copies,exams , application of different units in the practical field.** **Chapter 2- HUMAN REPRODUCTION** Human reproduction is a sexual process involving the formation and fusion of male and female gametes to produce offspring. The male reproductive system produces sperms in the testes through spermatogenesis, while the female reproductive system produces ova in the ovaries through oogenesis. The menstrual cycle regulates reproductive events in females, including ovulation, which is triggered by luteinizing hormone. **Experiments 1 - Slide preparation of pollen germination**. **Chapter 2- HUMAN REPRODUCTION** During pregnancy, the placenta facilitates exchange of nutrients and secretes important hormones like hCG, estrogen, and progesterone. After a gestation period of about nine months, parturition occurs with the help of oxytocin-induced

		uterine contractions. Lactation follows birth, where prolactin and oxytocin regulate milk production and ejection, and the first milk, colostrum, provides immunity to the newborn. **Chapter 3- REPRODUCTIVE HEALTH** Reproductive health is the state of physical, mental, and social well-being related to reproduction, ensuring safe and responsible practices. It includes sex education, family planning, and maternal care. Contraceptive methods such as natural, barrier, hormonal, intrauterine, and surgical methods help prevent unwanted pregnancies. Awareness and prevention of sexually transmitted diseases like AIDS, Gonorrhea, and Syphilis are essential. Infertility can be treated using assisted reproductive technologies like IVF and IUI, ensuring overall reproductive well-being. **Experiment 2- Transverse section of Testis.**
	COMPUTER SCIENCE	• **Unit III: Introduction to Computer Networks** Types:LAN,MAN,WAN Network Devices: modem, hub, switch, repeater, router, gatewayNetwork Topologies:Star,Bus,Tree,Mesh Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP.
	PHYSICAL EDUCATION	• Management of Sporting events • Children & women in sports
MAY	ENGLISH	Flamingo • Lost Spring • Keeping Quiet
	MATHS	• Matrices(Continued)
	PHYSICS	• Electric potential and Capacitance, Current and electricity
	CHEMISTRY	**Lesson-06 : : Haloalkanes & Haloarenes**: Haloarenes: Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT. **Lesson-2 : Electrochemistry** : Redox reactions, EMF of a cell, standard electrode potential. **Exp : Detection of acid & basic radicals for a given salt – $Pb(NO_3)_2$** **(If practical classes assigned in TT)**
	BIOLOGY	**Chapter 1- REPRODUCTION IN THE FLOWERING PLANTS** Reproduction in flowering plants involves sexual reproduction through the flower, which is the reproductive organ. The male part, stamen, produces pollen grains in the anther through microsporogenesis, while the female part, pistil (carpel), contains the ovary with ovules where megasporogenesis occurs to form the embryo sac. Pollination is the transfer of pollen grains from anther to stigma, which may be self or cross-pollination and is facilitated by agents like wind, water, or animals. After pollination, the pollen grain germinates on the stigma, forming a pollen tube that carries two male gametes to the ovule. Fertilization occurs through a unique process called double fertilization, where one male gamete fuses with the egg to form a zygote (syngamy) and the other fuses with polar nuclei to form endosperm (triple fusion). After fertilization, the ovule develops into a seed

		and the ovary into a fruit, ensuring continuation of the plant life cycle. **Distribution and assigning Investigatory projects.**
	COMPUTER SCIENCE	• Unit I :Computational Thinking and Programming–2 Functions:typesoffunction(built-infunctions,functionsdefinedinmodule,user defined functions)
	PHYSICAL EDUCATION	Yoga as preventive measures for lifestyle disease
JUNE	ENGLISH	Flamingo • Deep Water Vistas • Journey to the end of the Earth, Creative writing • Invitation Formal and informal
	MATH	• Matrices • Determinants
	PHYSICS	• Current electricity (Continued)
	CHEMISTRY	**Lesson-2 : Electrochemistry** : Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell**. C**onductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion. **Exp: Detection of acid & basic radicals for a given salt ($BaCl_2$,$Pb(NO_3)_2$)**
	BIOLOGY	**Chapter 5- MOLECULAR BASIS OF INHERITANCE** The molecular basis of inheritance explains how genetic information is stored, expressed, and transmitted through DNA. DNA (deoxyribonucleic acid) is the genetic material composed of two antiparallel strands forming a double helix, as proposed by James Watson and Francis Crick. The sequence of nitrogen bases (A, T, G, C) encodes genetic information. All experiments. **Experiment 3- Transverse section of Blastula and proper observation as spotting.** **Submission of INVESTIGATORY PROJECT.**
	COMPUTER SCIENCE	• Functions cont..
	PHYSICAL EDUCATION	• Physical Education • Sports for CWSN
JULY	ENGLISH	Flamingo : • A Thing of Beauty, • The Rattrap. Vistas: • The Tiger king • The Enemy Creative writing • Replies of invitation cont.
	MATH	• Continuity and Differentiability

		Application of Derivatives
	PHYSICS	• Magnetic Effects of Current and Magnetism
	CHEMISTRY	**Lesson-7 : Alcohols Phenols & Ethers** :**Alcohols:** Nomenclature, methods of preparation, Physical and chemical properties (of primary alcohols only),Identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.**Phenols:** Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols. **Ethers:** Nomenclature, methods of preparation,physical and chemical properties, uses. **Lesson-3: Chemical Kinetics :** Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, **Exp : Detection of acid & basic radicals for a given salt – $ZnCO_3$& $SrCl_2$**
	BIOLOGY	**Chapter 5- MOLECULAR BASIS OF INHERITANCE** DNA replicates semi-conservatively to ensure continuity of genetic material. Gene expression involves two main processes: transcription, where DNA is copied into RNA, and translation, where RNA directs the synthesis of proteins with the help of ribosomes and transfer RNA. The genetic code is triplet, universal, and degenerate. Regulation of gene expression occurs at multiple levels, ensuring proper functioning of cells. Mutations are changes in DNA sequence that can lead to variations. Techniques like recombinant DNA technology and DNA fingerprinting help in genetic analysis and biotechnology, forming the basis of heredity and variation in living organisms. **Chapter 4- PRINCIPLE OF INHERITANCE** The principles of inheritance and variation, as per NCERT, are based on the experiments of Gregor Mendel, who demonstrated that inheritance occurs through discrete units called factors (genes). The key topics include Mendel's laws—law of dominance, law of segregation, and law of independent assortment—explained through monohybrid and dihybrid crosses. Variations of inheritance such as incomplete dominance and codominance are also included. The concept of multiple alleles is explained using ABO blood groups. Chromosomal theory of inheritance connects Mendelian factors with chromosomes. Linkage and recombination describe the tendency of genes located on the same chromosome to be inherited together, with occasional crossing over. Sex determination in humans follows the XX-XY mechanism, and sex-linked inheritance explains traits like colour blindness and haemophilia. Thus, these topics together explain how traits are passed and how variation arises in organisms. **Experiment 4- Spotting of lateral section of Ovary** **Experiment 5- Study of mitosis by preparation sample from Onion root tip.** **Experiment 6- spotting of pathogens of different categories.**
	COMPUTER SCIENCE	• File Handling CSV file,text file ,binary file
	PHYSICAL EDUCATION	• Sports and nutrition
AUGUST	ENGLISH	Flamingo • Indigo

		• A Roadside stand Vistas • The Enemy cont.. • Letter writing (Editor- issues of public interest),
	MATH	• Integrals • Application of Integrals
	PHYSICS	• Electromagnetic Induction & Alternating Current, • Electromagnetic Waves
	CHEMISTRY	**Lesson-3: Chemical Kinetics :**Rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation. **Lesson-8 : Aldehydes Ketones & Carboxylic Acids :Aldehydes and Ketones**: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses.**Carboxylic Acids:** Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses. **Exp : Detection of acid & basic radicals for a given salt – $(NH_4)_2SO_4$**
	BIOLOGY	**Chapter 6- EVOLUTION** The origin and diversification of life through gradual changes over time. Early ideas were given by Jean-Baptiste Lamarck, but the most accepted theory is natural selection proposed by Charles Darwin, which states that organisms with favorable variations survive and reproduce more ("survival of the fittest"). Evolution is supported by evidence from fossils, comparative anatomy, embryology, and molecular biology. Concepts like adaptive radiation, homologous and analogous organs, and convergent evolution explain patterns of diversity. Genetic variations arise through mutations and recombination, forming the basis of evolution. Modern evolutionary theory, or neo-Darwinism, combines Mendelian genetics with natural selection. Hardy–Weinberg principle explains genetic equilibrium in populations and factors like mutation, gene flow, genetic drift, and natural selection cause deviations, leading to evolution. **Chapter 7- HUMAN HEALTH AND DISEASE** Physical, mental, and social well-being of an individual and the study of factors hat affect it. Health depends on proper nutrition, hygiene, genetic factors, and environment. Diseases are broadly classified into infectious and non-infectious. Infectious diseases are caused by pathogens such as bacteria, viruses, fungi, and parasites, for example malaria, typhoid, and tuberculosis. The immune system provides defense through innate immunity and acquired immunity, where antibodies and lymphocytes play a key role. Vaccination and immunization help in developing active immunity against diseases. The human immune system involves organs like bone marrow, thymus, spleen, and lymph nodes. Allergy is an exaggerated immune response, while autoimmune diseases occur when the body attacks its own cells. Drugs and alcohol abuse affect physical and mental health and can lead to addiction. Prevention through hygiene, balanced diet, vaccination, and awareness is essential for maintaining good health. **Experiment 7- Isolation of DNA from plant material** **Experiment 8- Spotting of Homologous and Analogous organ**

		Experiment 9- Spottings of Wind and Air pollination
	COMPUTER SCIENCE	• Data Structure Stack,operations on stack(push&pop)
	PHYSICAL EDUCATION	• Test and Measurement in Sports
SEPTEMBER	ENGLISH	Flamingo • Poets and pancakes, • Aunt jennifer Tigers. Vistas: • On The Face of It Creative Writing: • Letter writing (Job Application)
	MATH	• Linear Programming • Differential Equations(Continued)
	PHYSICS	• Ray Optics • Wave Optics
	CHEMISTRY	**Lesson-4 : d-& f - block elements :** General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first-row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$. **Lanthanoids** – Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences. **Actinoids -** Electronic configuration, oxidation states and comparison with lanthanoids . **Exp : Detection of molarity/strength of $KMnO_4$ by using Std. Mohr's salt soln.** **Exp : Crystallization (Double salt- Mohar's salt)**
	BIOLOGY	**Chapter 8- MICROBES IN HUMAN WELFARE** Microbes such as bacteria, fungi, and protozoa are widely used in the production of food products like curd, cheese, bread, and alcoholic beverages through fermentation. In industrial production, microbes are used to produce organic acids, enzymes, and antibiotics such as penicillin discovered by Alexander Fleming. In agriculture, nitrogen-fixing bacteria like Rhizobium improve soil fertility, and biofertilizers and biopesticides help in sustainable farming. Microbes also play a key role in sewage treatment through activated sludge processes and in biogas production for energy. Additionally, certain microbes are used in bioremediation to clean environmental pollutants. Thus, microbes are essential for human welfare in food, health, agriculture, industry, and environment. **Term 1 examination revision** **Experiment 10- pedigree analysis of Colour blindness, Rolling tongue.** **Experiment 11- To study Mendelian inheritance by using seeds.**
	COMPUTER SCIENCE	UnitIII:DatabaseManagementsystem: ● Database concepts: introduction to database concepts and its need ● Relational data model: relation, attribute, tuple, domain, degree, cardinality ,keys(candidate key, primary key, alternate key, foreign key)

	PHYSICAL EDUCATION	• Physiology and injury in Sports
OCTOBER	ENGLISH	Flamingo • :The interview Vistas • Memories of the childhood, creative writing • Report writing
	MATH	• Differential Equations • Vector Algebra
	PHYSICS	• Dual nature of Radiation & Matter • Atoms &Nuclei
	CHEMISTRY	**Lesson-9 : Amines : Amines**: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines. **Diazonium salts**: Preparation, chemical reactions and importance in synthetic organic chemistry. **Lesson-5: Coordination compounds :** Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; **Exp : Detection of molarity/strength of KMnO4 by using Std. Oxalic acid soln**
	BIOLOGY	**Chapter 9- PRINCIPLE OF BIOTECHNOLOGY** Two main core techniques: genetic engineering and bioprocess engineering. Genetic engineering involves the manipulation of genetic material by cutting and joining DNA from different sources using tools like restriction enzymes, DNA ligase, and vectors such as plasmids. This allows the introduction of desirable genes into host organisms. Bioprocess engineering involves the use of living cells or enzymes in controlled conditions (bioreactors) to produce useful products on a large scale. The basic steps include isolation of DNA, cutting of DNA, insertion into a vector, transfer into a host cell, and selection of recombinant cells. Techniques like PCR and gel electrophoresis support DNA amplification and analysis. These principles form the foundation for applications in medicine, agriculture, and industry, including production of insulin, vaccines, and genetically modified crops. **Chapter 10- BIOTECHNOLOGY AND IT'S APPLICATION** The use of living organisms, cells, or their enzymes to develop useful products for human welfare. In medicine, biotechnology has enabled the production of recombinant drugs like human insulin, vaccines, and gene therapy for treating genetic disorders. In agriculture, it is used to develop genetically modified (GM) crops with improved yield, pest resistance, and stress tolerance, such as Bt cotton. In animal husbandry, it helps in improving breed quality and disease resistance. Biotechnology also plays an important role in environmental management through bioremediation, sewage treatment, and waste management. Techniques like PCR, gene cloning, and recombinant DNA technology are widely used in these applications. Thus, biotechnology has wide applications in health, agriculture, industry, and environment for improving human life. **Chapter 11- ORGANISMS AND POPULATION**

		A population is a group of individuals of the same species living in a given area, interacting with each other and the environment. Population characteristics include birth rate, death rate, sex ratio, age structure, and population density. Populations grow following patterns like exponential and logistic growth, where resources and environmental resistance regulate growth. Interactions among populations include competition, predation, parasitism, commensalism, and mutualism. These interactions help maintain ecological balance and stability in ecosystems.
	COMPUTER SCIENCE	Database Management: • Structured Query Language: introduction, Data Definition Language and Data • Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints(not null, unique, primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove and attribute, add and remove primary key)
	PHYSICAL EDUCATION	• Psychology&Sports
NOVEMBER	ENGLISH	Flamingo • Going places Vistas • memories of child hood II, Creative writing • Article Writing
	MATH	• 3-DGeometry • Probability
	PHYSICS	• Electronic Devices
	CHEMISTRY	**Lesson-5 : Coordination compounds :** structure and stereoisomerism, the importance of coordination compounds (in qualitative analysis, extraction of metals and biological system). **Lesson-10 : Biomolecules : Carbohydrates** - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates. **Proteins** -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; E**nzymes**. **Hormones** - Elementary idea excluding structure. **Vitamins -** Classification and functions. **Nucleic Acids**: DNA and RNA. **Exp : Detection of functional groups(-OH,-CHO,-COOH,>C=O)**
	BIOLOGY	**Chapter 12- ECOSYSTEM** The biotic components include producers (plants), consumers (herbivores, carnivores, omnivores), and decomposers (bacteria and fungi), while abiotic components include air, water, soil, temperature, and light. Ecosystems can be natural (forest, pond, desert) or artificial (crop field, aquarium). Energy flow in an ecosystem is unidirectional, starting from the Sun to producers and then through different trophic levels in a food chain or food web. Only about 10% of energy is transferred from one trophic level to the next. **Chapter -13- BIODIVERSITY AND CONSERVATION**

		Diversity at genetic, species, and ecosystem levels. Biodiversity is essential for ecological balance, food security, medicine, and environmental stability. India is one of the mega biodiversity countries with rich species diversity. Biodiversity is unevenly distributed, with regions like tropical rainforests having higher diversity. Loss of biodiversity occurs due to habitat destruction, overexploitation, pollution, invasive species, and climate change. Conservation of biodiversity is done through in-situ methods like national parks, wildlife sanctuaries, and biosphere reserves, and ex-situ methods like botanical gardens, zoos, seed banks, and cryopreservation. Hotspots are regions with high biodiversity and high endemism under threat. Conservation strategies aim to protect species and maintain ecological balance for future generations. **Experiment 12- Spotting of adaptation** **Experiment 13- Calculation of plant population density in school premises.** **Experiment 14- Calculation of Plant population frequency.**
	COMPUTER SCIENCE	Unit III: Database Management System • aggregate functions (max, min, avg, sum, count), group by, having clause, joins:cartesian product on two tables, equi-join and natural join Interface of python with an SQL database: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using fetchone(),fetchall(), rowcount, creating database connectivity applications
	PHYSICAL EDUCATION	• Training Sports
DECEMBER	ENGLISH	ASL Revision
	MATH	REVISION
	PHYSICS	REVISION
	CHEMISTRY	REVISION
	BIOLOGY	**REVISION AND LESSON WISE TEST & PRE BOARD-1**
	COMPUTER SCIENCE	REVISION
	PHYSICAL EDUCATION	REVISION