Syllabus of Class XI (Science Stream)

Mathematics

FIRST PERIODIC CHAPTERS:

1. Conic Section
2. Probability

SECOND PPERIODIC CHAPTER:

1. Limits and Derivatives
2. Trignometric functions

SECONDTERM SYLLABUS

1. Trigonometric Functions
2. Permutation and combination
3. Brief Review of Cartesian System of rectangular Co-ordinates
4. Conic Section
5. Limits and Derivatives (Half)
6. Probability
7. Linear Inequation

PHYSICS

SYLLABUS OF 2nd PERIODIC TEST

1 System of particles and Rotational motion 2 Gravitation

Syllabus of 3rd Periodic Test

A solid B hydrostatics sCHydronamics

D Thermal properties of Matter

Unit VII: Properties of Bulk Matter

Chapter–9: Mechanical Properties of Solids

Elastic behaviour, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity, Poisson's ratio; elastic energy.

Chapter–10: Mechanical Properties of Fluids

Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure.

Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications.

Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.

Chapter–11: Thermal Properties of Matter

Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity.

Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation displacement Law, Stefan's law, Greenhouse effect.

Unit VIII: Thermodynamics

Chapter–12: Thermodynamics

Thermal equilibrium and definition of temperature (zeroth law of thermodynamics), heat, work and internal energy.First law of thermodynamics, isothermal and adiabatic processes.

Second law of thermodynamics: reversible and irreversible processes, Heat engine and refrigerator.

Unit IX: Behaviour of Perfect Gases and Kinetic Theory of Gases

Equation of state of a perfect gas, work done in compressing a gas.

Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.

Unit X:Oscillations and Waves

Periodic motion - time period, frequency, displacement as a function of time, periodic functions.

Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a loaded spring-restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period.Free, forcedand damped oscillations (qualitative ideas only), resonance.

Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats.

CHEMISTRY

Term-II

S.No	UNIT	Periods	Marks
1	States of Matter: Gases and Liquids	9	15
2	Chemical Thermodynamics	14	
3	Equilibrium	12	
4	s-Block Elements	5	11
5	Some p-Block Elements	9	
6	Hydrocarbons	10	9
	TOTAL	59	35

States of Matter: Gases and Liquids: Three states of matter, intermolecular interactions, types of bonding, melting and boiling points, role of gas laws in elucidating the concept of the molecule, Boyle's law, Charles law, Gay Lussac's law, Avogadro's law, ideal behaviour, empirical derivation ofgasequation,Avogadro'snumber,idealgasequationanddeviationfromidealbehaviour.

Chemical Thermodynamics: Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions.

First law of thermodynamics -internal energy and enthalpy, measurement of U and H, Hess's lawofconstantheatsummation,enthalpyofbonddissociation,combustion,formation,atomization,s

ublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction)

Introductionofentropyasastatefunction,Gibb'senergychangeforspontaneousandnon-spontaneousprocesses.

Third law of thermodynamics(brief introduction).

Equilibrium: Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium – Le Chatelier's principle, ionicequilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, buffer solution, solubility product, commonion effect(with illustrative examples).

s -Block Elements: Group 1 and Group 2 Elements -General introduction, electronic configuration,occurrence,anomalouspropertiesofthefirstelementofeachgroup,diagonalrelationship,trendsinthe variation of properties (such as ionization enthalpy, atomic and ionic radii), trends in chemical reactivity with oxygen, water, hydrogen and halogens, uses.

Some p-Block Elements: General Introduction top-Block Elements

Group13Elements:Generalintroduction,electronicconfiguration,occurrence,variationofproperties, oxidation states, trends in chemical reactivity, anomalous properties of first element of the group, Boron-physical and chemical properties.

Group14Elements:Generalintroduction,electronicconfiguration,occurrence,variationofproperties, oxidation states, trends in chemical reactivity, anomalous behaviour of first elements.Carbon-catenation,allotropicforms,physicalandchemicalproperties.

Hydrocarbons: Classification of Hydrocarbons Aliphatic Hydrocarbons:

Alkanes- Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions.

Alkenes-Nomenclature,structureofdoublebond(ethene),geometricalisomerism,physicalproperties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water,hydrogenhalides(Markovnikov'sadditionandperoxideeffect),ozonolysis,oxidation,mechanismof electrophilicaddition.

Alkynes-
Nomenclature,structureoftriplebond(ethyne),physicalproperties,methodsofpreparation,chemicalreactions:acidiccharacterofalkynes,additionreactionof-hydrogen,halogens,hydroge Introduction, IUPAC nomenclature, benzene: resonance, aromaticity,chemicalproperties:mechanismofelectrophilicsubstitution.Nitration,sulphonation,halogenation,Friedel Craft's alkylation and acylation, directive influence of functional group in monosubstituted benzene.Carcinogeni city and toxicity.

PRACTICALS

Term II: At the end of Term II, **a 15-mark Practical** would be conducted under the supervision of subject teacher. This would contribute to the overall practical marks for the subject. **OR**

In case the situation of lockdown continues beyond December 2021, a *Practical Based Assessment(pen-paper) of 10 marks and Viva 5 marks* would be conducted at the end of Term II by the subject teacher.Thiswouldcontributetotheoverallpracticalmarksforthesubject.

MUSIC

Periodic Test

L-1 Thaat, Jaati, Tala

L-2 Dhrupad

L-3 Life sketch Tansen

L-4 Tanpura

L-5 Bhimplasi Description

TERM II

L-1 Thaat, Jaati, Laya, Tata, Margi_Desi

L-2 Dhrupad and Tarana

L-3 Life Sketch

L-4 Knowledge of the Structure of Tanpura

L-5 RaagBhimplasi Description with Notation

PHYSICAL EUCATION (048)

TERM II

Theory

Ch- 6 Physical Activity and Leadership Training

Ch-7 Test, Measurement and Evaluation

Ch-8 Fundamentals of Anatomy, Physiology and Kinesiology in Sports.

Ch-9 Psychology and Sports

Ch-10 Training and Doping in Sports.

INFORMATICS PRACTICES

TERM II

Unit 3

Database concepts and the Structured Query Language

- Database Concepts Introduction to database concepts and its need. Database Management system Relational data model: concept of attribute domain, tuple, relation, candidate key, primarykey alternate key**,** foreign key.
- Structured Query language Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL Creating a Database, using database, showing tables using MySQL,
- Data Types: Char, varchar, int, float, date.
- Data Definition Commands CREATE, DROP, ALTER ((Add and Remove Primary key, attribute) Data Query Commands SELECT-FROM-WHERE, LIKE, BETWEEN, IN, ORDER BY, using arithmetic, local, relational operators and NULL values in queries, Distinct clause Data MANIPULATION Commands INSERT, UPDATE, DELETE.

BIOLOGY

TERM II

Ch-10 Cell Cycle and Cell division

Topics Cell Cycle, meiosis and their significante.

Ch-3 Photosynthesis as a means of autorophic nutrition, site of photosynthesis,

Piementsinvourd in photosynthesis, photo Chemical and biosynthetic phases of photosynthesis cyclic and non cyclic photo phospholylation, Chemiosotic hypothesis

Hotonespiration C3 and C4 pathays, factors affecting Photosynthesis

Ch-14 Respiration in plants

Topics- Exchange of gases, Cellular respiration glycolysis , fermentation

(analrobic) TCA cycle an electron transport system aerobic energy relation no of ATP molecules generated amphibolic respiratory quotient.

Ch-15 Plant growth and development

Topic – Groth regulation Auxins, gibberellins, Cytokinin, ethykene, ABA

Ch-17 Brething an exchange of gases

Topics- Respiratory organs in animals, respiratory system in humans mechanism of breathing and regulation in humans exchange of gases transport of gases and regulation of respiration respiratory volume, disodevdetaled to respiration respiratory disorders.

Ch-18 Body fluids and circulation

Topics- Body fluids and circulation Composition of blood, blood group, coagulation of blood,

Composition of lymph and its function human circulatory system human heart an blloo vessels cardiac cycle, cardiac output, ECG, double circulation,Regulation of Cardiac Activity, Disoders and circulator system hypertension, coronary artery disease, angina pectoris, heart failure.

Ch-19 Excretory products and their eliminations

Topics – Moods of exxxcretionammonotelism,

Ureotelism, uricotelism, human excretory system structure and functionusine formation,

Osmonegulation, regulation of kidney fuction rennin angiotensin, arrialnatriurotic factor, ADH and diabetes insipidus, lo of other organs in excretion, disorders uremia, renal failure,

Renal calculi, nephsitis, dialysis and artificial kidney, kidney transplant.

Ch-20 Locomotion and Movement

Topics – Skeletal muscle, contractile proteins and muscle contraction proteins and muscle contraction.

Ch-21 Neural control and condition

Topics- Neuron and neives, Nervous system in humans central nervous system peripheral nervous system an visceral nerous system, eneration and conuction of nerve impulse.

Ch-22 Chemical coordination and Integration

Topic - Endocrine lands and hormones, human endoceince systems hypothalamus pituitary, pinral, thyroid parathyold, adrenal, Pancreas, gonads mechanism cyHormons action, lok of hormones as messengers and regulation, hypo and hyperactivity and related disorders, duratism, acromegaly, cretinism, goints, eophtholmic goiter diabetes Addisons diseases.

English

Term-II

1. HORNBILL (READER)
2. SNARSNOTE (Supplmentry Reader)

1. Reading Comprehension
    1. Unseen Passage
    2. Note making
2. Creative Writing Skills and Grammar, Short Writing Task
    1. Posters
3. Long Writing Tasks
    1. Official Letters
    2. Debate
4. Grammar
    1. Determiners
    2. Tenses
    3. Recording of sentences
5. Literature Book- HORNBILL
    1. The Ailing planet
    2. The Browning version
    3. Silk Road
6. Poetry
    1. The voice of the Rain
    2. Childhood
7. BOOK-SNAPSHOTS

1. Albert Einatain at School
2. Mothers Day
3. Birth