SYLLABUS OF CLASS XII (Science Stream)

PHYSICS

TERM II

Unit V: Electro magnetic waves

Electromagnetic waves, their characteristics, their Transverse nature (qualitative ideas only).

Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about theiruses.

Unit VI: Optics

Optics and Optical Instruments Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through aprism.

Scattering of light - blue colour of sky and reddish apprearance of the sun at sunrise and sunset.

Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.

Wave Optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light, diffraction due to a single slit, width of central maximum

Unit VII: Dual Nature of Radiation and Matter: Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Experimental study of photoelectric effect Matter waves-wave nature of particles, de-Broglie relation

Unit VIII: Atom sand Nuclei: Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.

Chapter–13: Nuclei: Composition and size of nucleus, Radioactivity, alpha, beta and gamma particles/rays and their properties; radioactive decay law, half life and mean life.

Unit IX: Electronic Devices: Semiconductor Electronics: Materials, Devices and Simple Circuits

Energy bands in conductors, semiconductors and insulators (qualitative ideas only)Semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier Special purpose p-n junction diodes: LED, photodiode, solar cell

MATH

SECOND TERM

1. Integration
2. Application of Integration
3. Differential Equations
4. Vector Alegebra
5. 3-D Geometry
6. Probability

SECOND PERIODIC SYLLABUS

1. Integration
2. Application of Integration

3rd PERIODIC SYLLABUS

1. Differential Equations
2. Vector Alegbra

BIOLOGY

Ch-8 Human Health and Diseases

Topics- Pathogens, Parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascoriasis, tphoid, pneumonia commo cold amoebiasis, ring worm and their control Basic concepts of immundogy vaccines, cancer, HIV and AIDS Adolescence drug and alcohal abuse

Ch-10 Microbes inHuma Welfare

Topics- Microbes I food processing, industrial production, sewage treatment energy generation and microbes as bio control agents and bio-fertilizers Antibiotics production and sudicious use.

Ch-11 Biotechnology- Principles and processes

Topics- Genetic Enginering (Rocombinant DNA Technology)

Ch-12 Biotechnology and its Application

Topics- Application of biotechnology in health and agriculture Human insulin and vaccine production, stem cell technology gene therophy, genetically modified organisms Bt crops transgenic animals bio safety issues, bio pinacy and patients .

Ch-13 Organisms and Population

Topics- Organisms and environments Habitat and niche, population and ecological adaptations, population interactions mutualism competition predations mutualms, competition predation, Parasitism population attributes growth birth rate, death rate, ag distribution.

Ch-15 Biodiversity and its conservations

Topics- Biodiversity Concept patterns, importance loss of biodiversity, biodiversity convervation, hotspots, endargered organisms, extinction, Red Data book, sacred geoves, biosphere reserves, national parks, wild life sanctuaries and Ramsar Sites.

INFORMATICS PRACTICES

TERMII

Unit 2

Database Query using SQL

- Math fuctions: POWER (), ROUND (), MOD ().
- Text functions :UCASE ()/UPPER (), LCASE ()/ LOWER MID () / SUBSTRING ()/ SUBSTR (), LENGTH(), LEFT(), RIGHT(), INSTR(), LTRIM(), RTRIM(), TRIM().
- Date Functions: NOW (), DATE (), MONTH(), MONTHNAME (), YEAR (), DAY (), DAYNAME (). Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (), using COUNT (*).
- Querying and Manipulating data using Group by Having, Order by.

Unit 3

Introduction to computer networks

- Introduction to networks, Types of network: LAN, MAN, WAN.
- Network Devices: modem, hub, Switch, repeater, router, gateway
- Network Topologies: Star, Bus, Tree, Mesh.
- Introduction to Internet, URL, WWW and its applications- Web, email,Chat, VoIP.
- Website: Introduction difference between a website and webpage, static vs dynamic web page, web server and hosting of a website.
- Web Browsers: Introduction, commonly used browsers, browser settings add-ons and plug-in cookies

Programs in practical File

PHYSICAL EDUCATION

TERM II

Ch-3 Yoga & Lifestyle

Ch-4 Physical Education & Sports for CWSN (Children with Special Needs- Divyang)

Ch-7 Physiology & Injuries in Sports

Ch-9 Psychology & Sports

Ch-10 Training in Sports.

Chemistry

Term-II

S. No	UNIT	No. of Periods	MARKS
1	Electrochemistry	7	
2	Chemical Kinetics	5	
3	Surface Chemistry	5	13
4	d-and f-Block Elements	7	
5	Coordination Compounds	8	9
6	Aldehydes, Ketones and Carboxylic Acids	10	
7	Amines	7	13
	TOTAL	49	35

Electrochemistry: Redoxreactions,EMFofacell,standardelectrodepotential,Nernstequationand itsapplicationtochemicalcells,RelationbetweenGibbsenergychangeandEMFofacell,conductancein electrolyticsolutions,specificandmolarconductivity,variationsofconductivitywithconcentration,Ko hlrausch'sLaw,electrolysis.

ChemicalKinetics: Rateofareaction(Averageandinstantaneous),factorsaffectingrateofreaction: concentration,temperature,catalyst;orderandmolecularityofareaction,ratelawandspecificrateco nstant,integratedrateequationsandhalf-life(onlyforzeroandfirstorderreactions).

Surface Chemistry: Adsorption - physisorption and chemisorption, factors affecting adsorption ofgasesonsolids,colloidalstate:distinctionbetweentruesolutions,colloidsandsuspension;lyophilic,lyop hobic,multi-molecularandmacromolecularcolloids;propertiesofcolloids;Tyndalleffect,Brownianmovement,electro phoresis,coagulation.

MATH

SECOND PERIODIC SYLLABUS

1. Integration
2. Application of Integration

THIRD PERIODIC SYLLABUS

1. Differential Equations
2. Vector Alegbra

SECOND TERM

1. Integration
2. Application of Integration
3. Differential Equations
4. Vector Alegebra
5. 3-D Geometry
6. Probability

ENGLISH

TERM II

1. Flamingo Reader NCERT
2. Vistas Supplementary Reader NCERT

Reading

- Unseen Passage
- Case Based Unseen

Writing

- Formal and Informal Invitation
- Formal and Informal Replies
- Job application
- Report writing

Flamingo (Reader as prescribed by NCERT)

- The Rattrap
- Indigo
- A Thing of Beauty (Poem)
- Aunt Jennifer's Tigers (Poem)

Book Vistas (Supplementary Reader NCERT)

- Should Wizard Hit Mommy?
- On The Face of It
- Evan Tries An O Level

Music

Periodic Test

L-1 Gram, Murchhana, Khatka

L-2 Sangeet Parijat

L-3 Life sketch Bade Gulam Ali Khan

L-4 Tuning of Tanpura

TERM II

L-1 Gram, Murchhana, Kan, KhatkaMurki

L-2 SangeetParijat

L-3 Life Sketch OfFaiyaz Khan Bade Gulam Ali

Khan, Krishna Rao Shankar '

L-4 Tuning of Tanpura

L-5 Raags with Notation