SHIVALIK PUBLIC SCHOOL
Syllabus
Class : XII (2020-21)

SUBJECT: BIOLOGY (044)

Prescribed Book:

1. Biology, Class XII, Published by NCERT

RATIONALE:

The present syllabus reinforces the ideas introduced till the secondary classes. It provides the students with new concepts along with an extended exposure to contemporary areas of the subject. The syllabus also aims at emphasizing on the underlying principles that are common to both animals and plants as well as highlighting the relationship of biology with other areas of knowledge. The format of the syllabus allows a simple, clear, sequential flow of concepts without any jarring jumps. The syllabus also stresses on making better connections among biological concepts. It relates the study of biology to real life through the use of techonology. It links the discoveries and innovations in biology to everyday life such as environment, industry, health and agriculture. The updated syllabus also focuses on reducing the curriculum load while ensuring that ample opportunities and scope for learning and appreciating basic concepts of the subject continue to be available within its framework.

OBJECTIVES:

- promote understanding of basic principles of Biology
- encourage learning of emerging knowledge and its relevance to individual and society.
- promote rational/scientific attitude to issues related to population,environment and development
- enhance awareness about environmental issues, problems and their appropriate solutions
- create awareness amongst the learners about diverity in the living organisms
- appreciate that the most complex biological phenomena are built on essentially simple processes.

It is expected that the students would get an exposure to various branches of Biology in the syllabus in a more contextual and friendly manner as they study its various units.

CLASS XII (2020-21) (THEORY)

Time:3 Hours **Max. Marks:70**

Unit	TITLE	No. of Periods	Marks
VI	Reproduction	30	14
VII	Genetics and Evolution	40	18
VIII	Biology and Human Welfare	30	14
IX	Biotechnology and its Applications	30	10
X	Ecology and Environment	30	14
	Total	**160**	**70**

Assessment Areas (Theory) 2020-21
Biology (044)

Time : 3 hrs. **Maximum Marks: 70 Marks**

Competencies	
Demonstrate Knowledge and Understanding	50%
Application of Knowledge / Concepts	30%
Analyse, Evaluate and Create	20%

QUESTION WISE BREAK UP

SUMMATIVE ASSESMENT

Type of Questions	Mark(s) per Question	Total No. of Questions	Total Marks
VSA	**1**	**05**	**05**
SA-I	**2**	**07**	**14**
SA-II	**3**	**12**	**36**
LA	**5**	**3**	**15**
Total		**27**	**70**

- Typology of questions: VSA including MCQs, Assertion – Reasoning type questions; SA; LA-I; LA-II; Source-based/ Case-based/ Passage-based/ Integrated assessment questions.
- An internal choice of approximately 33% would be provided.Suggestive verbs for various competencies
- **Demonstrate, Knowledge and Understanding**
  State, name, list, identify, define, suggest, describe, outline, summarize, etc.
- **Application of Knowledge/Concepts**
  Calculate, illustrate, show, adapt, explain, distinguish, etc.
- **Analyze, Evaluate and Create**
  Interpret, analyse, compare, contrast, examine, evaluate, discuss, constru

UNITWISE SYLLABUS

UNIT-1 Reproduction **(Marks-7)**

Keyword: sexual reproduction, dioecious, monoecious, pollination, pericarp, syngamy, meiocyte, parthenocarpy, apomixis.

Content:

Sexual reproduction in flowering plants: flower structure; development of male and female gametophytes; pollination; types, agencies and examples, out breeding devices; pollen pistil interaction; double fertilisations; post fertilization events- development, endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; significance of seed dispersal and fruit formation.

UNIT-2 Reproduction (Marks-7)

Keywords: Human reproduction, testis, ovary, gametogenesis, spermatogenesis, oogenesis, follicular atresia, menarche, ovulation, menopause, cleavage, implantation.

Content:

Human reproduction: male and female reproductive system; microscopic anatomy of testis and ovary; gametogenesis-spermatogenesis and oogenesis, menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).

Reproductive health: Need for reproductive health and prevention of sexually transmitted diseases (STD); birth control- need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies-IVF, ZIFT, GIFT (elementary idea for general awareness).

Unit-3 Genetics (Marks-6)

Keywords: Heredity, Variations, Alleles, Phenotype, Genotype, Homozygote, Heterozygote, Dominant allele, Recessive allele, Pleiotropy, Multiple allelism, Co dominance, Monohybrid, Dihybrid.

Content:

Heredity and variation: Mendelian inheritance, Deviations from mendelism,incomplete dominance, Co dominance, Multiple alleles and inheritance of blood groups, Pleiotropy, Elementary idea of polygenic inheritance , Chromosome theory of inheritance, Chromosome and genes, Sex determination in human, Birds and honey bee, Linkage and crossing over, Sex linked inheritance, haemophilia, Colour blindness, Thalassemia, Phenylketonuria. Mendelian disorders in humans, Chromosomal disorders in humans Down syndrome, Turners and Klinefelter's syndrome.

UNIT-4 Molecular basis of inheritance

Keywords: Replication, ori of replication, Nucleosome, Transcription, Replication fork, okazaki fragments.

Content: Molecular basis of inheritance (Marks-6)

Search for genetic material and DNA as genetic material, Structure of DNA and RNA, DNA packaging, DNA replication, Central dogma, Trancription,

UNIT-5 (Marks-6)

Keywords; Translation, Silent mutations, Point mutations, Frame shift mutation, Operon, DNA probe.

Content: Molecular basis of inheritance

Genetic Code, Translation, Gene expression and regulation-lac operon, Genome and human genome project, DNA fingerprinting.

UNIT-6 Biology and Human Welfare (Marks-6)

Keywords: Pathogens, antibodies, antigens, immunity, interferons, allergy, cancer, metastasis, tumours, retroviruses, drug abuse, adolescence, addiction.

Content:

Human Health and diseases: Pathogens; parasites causing human diseases (malaria, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm); Basic concepts of immunology-vaccines; cancer, HIV and AIDS; Adolescence, drug and alcohol abuse.

UNIT-7 Biology and Human welfare (Marks-8)

Keywords: processing, fermentors, Flocs, antibiotics, biogas, Baculoviruses, bio fertilizer.

Content:

Microbes in human welfare: Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use.

UNIT-8 Biotechnology (Marks-10)

Keywords: Transgenic, gene cloning, plasmid, recombinant DNA, recognition site, palindromes, electroporation, gene therapy, microinjection, gene gun.

Content:

Principles and processes of biotechnology: Genetic Engineering (Recombinant DNA Technology).

Application of biotechnology in health and agriculture: Human insulin and vaccine production, gene therapy; genetically modified organisms-Bt crops; transgenic animals; biosafety issues, biopiracy and patents.

UNIT-9 Ecology and Environment (Marks-7)

Keywords: Habitat, Niche, ecosystem, Birth rate, Mortality rate, Predation, Parasitism.

Content:

Organism and environment: Habitat and niche, Population and ecological adaptation, Population interactions; mutualism, competition, Predation, Parasitism, Population attributes, growth rate and birth rate, age distribution

UNIT-10 Ecology and Environment (Marks-7)

Keyword: Biodiversity hostspots, endangered animals, Biosphere, Aforestation, Global warming, sacred forests, Cryopreservation.

Content:

Biodiversity and its conservation: Concept of biodiversity; patterns of biodiversity; importance of biodiversity; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, national parks and sanctuaries.

PRACTICALS

Time allowed: 3 Hours **Max. Marks: 30**

Evaluation Scheme		Marks
One Major Experiment 5, 6		5
One Minor Experiment 2, 3		4
Slide Preparation 1, 4		5
Spotting		7
Practical Record + Viva Voce		4
Investigatory Project and its Project and its Record + Viva Voce	Credit to the students' work over the academic session may be given	5
TOTAL		**70**

A. List of Experiments

1. Prepare a temporary mount to observe pollen germination.
2. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity. Correlate with the kinds of plants found in them.
3. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organism.
4. Prepare a temporary mount of onion root tip to study mitosis.
5. Study the effect of different temperatures or three different pH on the activity of salivary amylase on starch.
6. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

B. Study/observation of the following (Spotting)

1. Flowers adapted to pollination by different agencies (wind, insects, birds).
2. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
3. Meiosis in onion bud cell or grasshopper testis through permanent slides.
4. T.S. of blastula through permanent slides (Mammalian).
5. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour blindness.
6. Common disease causing organisms like *Ascaris, Entamoeba, Plasmodium*, any fungus causing ringworm through permanent slides, models or virtual images. Comment on symptoms of diseases that they cause.
7. Two plants and two animals (models/virtual images) found in xeric conditions. Comment upon their morphological adaptations.
8. Two plants and two animals (models/virtual images) found in aquatic conditions. Comment upon their morphological adaptations.

SHIVALIK PUBLIC SCHOOL
Syllabus
Class : XII (2020-21)

PHYSICAL EDUCATION (048)

Theory **Max. Marks 70**

Unit I Planning in Sports
 Meaning & Objectives of Planning
 Various Committees & its Responsibilities (pre; during & post)
 Tournament – Knock-Out, League or Round Robin & Combination
 Procedure to Draw Fixtures – Knock-Out (Bye & Seeding) & League (Staircase & Cyclic)
PRACTICAL-General fitness-Warming up and cooling down

Unit II Sports & Nutrition
 Balanced Diet & Nutrition: Macro & Micro Nutrients
 Nutritive & Non-Nutritive Components Of Diet
 Eating For Weight Control – A Healthy Weight, the Pitfalls of Dieting, Food Intolerance & Food
Myths
PRACTICAL- Game-Fundamentals skills of Badminton

Unit III Yoga & Lifestyle
 Asanas as preventive measures
 Obesity: Procedure, Benefits & contraindications for Vajrasana, Hastasana, Trikonasana, Ardh
Matsyendrasana
 Diabetes: Procedure, Benefits & contraindications for Bhujangasana, Paschimottasana, Pavan
Muktasana, Ardh Matsyendrasana
 Asthema: Procedure, Benefits & contraindications for Sukhasana, Chakrasana, Gomukhasana,
Parvatasana, Bhujangasana, Paschimottasana, Matsyasana
 Hypertension: Tadasana, Vajrasana, Pavan Muktasana, Ardha Chakrasana, Bhujangasana,
Sharasana
PRACTICAL-Practice of yoga asana,meditation and pranayam

Unit IV Physical Education & Sports for CWSN (Children with Special Needs - Divyang)
 Concept of Disability & Disorder
 Types of Disability, its causes & nature (cognitive disability, intellectual disability, physical disability)
 Types of Disorder, its cause & nature (ADHD, SPD, ASD, ODD, OCD)
 Disability Etiquettes

 Strategies to make Physical Activities accessible for children with special need.

PRACTICAL- Athletics events-Short, middle and long races

Unit V Children & Women in Sports

 Motor development & factors affecting it
 Exercise Guidelines at different stages of growth & Development
 Common Postural Deformities - Knock Knee; Flat Foot; Round Shoulders; Lordosis, Kyphosis, Bow
Legs and Scoliosis and their corrective measures
 Sports participation of women in India

PRACTICAL- Game-Badminton-Dimension, rules of the game

Unit VI Test & Measurement in Sports

o Motor Fitness Test – 50 M Standing Start, 600 M Run/Walk, Sit & Reach, Partial Curl Up,
Push Ups (Boys), Modified Push Ups (Girls), Standing Broad Jump, Agility – 4x10 M Shuttle
Run
o Measurement of Cardio Vascular Fitness – Harvard Step Test/Rockport Test -
Computation of Fitness Index: Duration of the Exercise in Seconds x 100
5.5 X Pulse count of 1-1.5 Min after Exercise
O Rikli & Jones - Senior Citizen Fitness Test 1. Chair Stand Test for lower body strength
2. Arm Curl Test for upper body strength
3. Chair Sit & Reach Test for lower body flexibility
4. Back Scratch Test for upper body flexibility
5. Eight Foot up & Go Test for agility
6. Six Minute Walk Test for Aerobic Endurance

PRACTICAL-AAPHER and Barrow test

Unit VII Physiology & Injuries in Sports

 Physiological factor determining component of Physical Fitness
 Effect of exercise on Cardio Respiratory System
 Effect of exercise on Muscular System
 Sports injuries: Classification (Soft Tissue Injuries :(Abrasion, Contusion, Laceration, Incision,
Sprain & Strain) Bone & Joint Injuries: (Dislocation, Fractures: Stress Fracture, Green Stick,
Comminuted, Transverse Oblique & Impacted) Causes, Prevention& treatment
 First Aid – Aims & Objectives

PRACTICAL-Game-Volleyball-Fundamental skills

Unit VIII Biomechanics & Sports

 Meaning and Importance of Biomechanics in Sports
 Types of movements (Flexion, Extension, Abduction & Adduction)
 Newton's Law of Motion & its application in sports

PRACTICAL- Dimension, rules of Volleyball

Unit IX Psychology & Sports

 Personality; its definition & types – Trait & Types (Sheldon & Jung Classification) & Big Five
Theory

 Motivation, its type & techniques

 Meaning, Concept & Types of Aggressions in Sports

PRACTICAL-Practice of Meditation and Pranayama

Unit X Training in Sports

 Strength – Definition, types & methods of improving Strength – Isometric, Isotonic & Isokinetic

 Endurance - Definition, types & methods to develop Endurance – Continuous Training, Interval
Training & Fartlek Training

 Speed – Definition, types & methods to develop Speed – Acceleration Run & Pace Run

 Flexibility – Definition, types & methods to improve flexibility

 Coordinative Abilities – Definition & types

PRACTICAL-Isometric,Isotonic,Isokinetic exercise

Practical	**Max. Marks 30**
01. Physical Fitness Test -	6 Marks
02. Proficiency in Games and Sports (Skill of any one Game of choice from the given list*)-	7 Marks
03. Yogic Practices	7 Marks
04. Record File ** -	5 Marks
05. Viva Voce (Health/ Games & Sports/ Yoga) -	5 Marks

* Basketball, Football, Kabaddi, Kho-Kho, Volleyball, Handball, Hockey, Cricket, Bocce &
Unified Basketball [CWSN (Children with Special Needs - Divyang)]

**Record File shall include:

Practical-1: Fitness tests administration for all items.

Practical-2: Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle
Disease.

Practical-4: Any one game of your choice out of the list above. Labelled diagram of field & equipment
(Rules, Terminologies & Skills).

SHIVALIK PUBLIC SCHOOL
Syllabus
Class : XII (2020-21)

SUBJECT: MATHEMATICS (041)

The Syllabus in the subject of Mathematics has undergone changes from time to time in accordance with growth of the subject and emerging needs of the society. Senior Secondary stage is a launching stage from where the students go either for higher academic education in Mathematics or for professional courses like Engineering, Physical and Biological science, Commerce or Computer Applications. The present revised syllabus has been designed in accordance with National Curriculum Framework 2005 and as per guidelines given in Focus Group on Teaching of Mathematics 2005 which is to meet the emerging needs of all categories of students. Motivating the topics from real life situations and other subject areas, greater emphasis has been laid on application of various concepts.

Objectives

The broad objectives of teaching Mathematics at senior school stage intend to help the students:

- to acquire knowledge and critical understanding, particularly by way of motivation and visualization, of basic concepts, terms, principles, symbols and mastery of underlying processes and skills.
- to feel the flow of reasons while proving a result or solving a problem.
- to apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method.
- to develop positive attitude to think, analyze and articulate logically.
- to develop interest in the subject by participating in related competitions.
- to acquaint students with different aspects of Mathematics used in daily life.
- to develop an interest in students to study Mathematics as a discipline.
- to develop awareness of the need for national integration, protection of environment, observance of small family norms, removal of social barriers, elimination of gender biases.
- to develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.

Course Structure

CLASS-XII
(2020-21)

One Paper **Max Marks:80**

No.	Units	No. of Periods	Marks
I.	Relations and Functions	17	08
II.	Algebra	35	10
III.	Calculus	57	35
IV.	Vectors and Three - Dimensional Geometry	26	14
V.	Linear Programming	13	05
VI.	Probability	20	08
	Total	168	80
	Internal Assessment		20

Prescribed Books :

1) Mathematics Part I - Textbook for Class XII, NCERT Publication
2) Mathematics Part II - Textbook for Class XII, NCERT Publication
3) Mathematics Exemplar Problem for Class XII, Published by NCERT
4) Mathematics Lab Manual class XII, published by NCERT
5) http://www.ncert.nic.in/exemplar/labmanuals.html

UNIT – I

Chapter 3-MATRICES

Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Noncommutativity of multiplication of matrices, Invertible matrices; (Here all matrices will have real entries).

Chapter 4 - DETERMINANTS

Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

UNIT – II

Chapter 2-Inverse trigonometric functions

Definition, range, domain, principal value branch.

UNIT – III

Chapter 1-Relations and Functions

Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.

UNIT – IV

Chapter 5- Continuity And Differentiability

Continuity and differentiability, derivative of composite functions, chain rule, derivative of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

UNIT – V

Chapter 6 - Applications Of Derivatives

Applications of derivatives: increasing/decreasing functions, tangents and normals, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real life situations).

UNIT – VI

Chapter 7- INTEGRALS

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2+bx+c}}$$

$$\int \frac{px + q}{ax^2 + bx + c} dx, \int \frac{px + q}{\sqrt{ax^2+bx + c}} dx, \int \sqrt{a^2 \pm x^2}\, dx, \qquad \int \sqrt{x^2 - a^2} dx$$

Fundamental Theorem of Calculus (without proof).Basic properties of definite integrals and evaluation of definite integrals.

Chapter 8- APPLICATIONS OF INTEGRALS

Applications in finding the area under simple curves, especially lines, parabolas; area of circles /ellipses (in standard form only) (the region should be clearly identifiable).

UNIT VII

Chapter 9 - DIFFERENTIAL EQUATIONS

Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree of the type:

$\frac{dy}{dx} = f(y/x)$. Solutions of linear differential equation of the type:

$\frac{dy}{dx} + py = q$, where p and q are functions of x or constant.

UNIT VIII

Chapter 10- Vectors

Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors),

position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors.

UNIT – IX

Chapter 11- Three - dimensional Geometry

Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Distance of a point from a plane.

Chapter 12- Linear Programming

Introduction, related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems. graphical method of solution for problems in two variables, feasible and infeasible regions (bounded), feasible and infeasible solutions, optimal feasible solutions (up to

three non-trivial constraints).

UNIT X

Chapter 13- Probability

Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution.

ACTIVITIES Any 10 activities from the Math Lab Manual prescribed by NCERT.

Assessment of Activity Work:

Through out the year any 10 activities shall be performed by the student from the

activities given in the NCERT Laboratory Manual for the respective class (XI or XII) which is available on the link : http://www.ncert.nic.in/exemplar/labmanuals.html

a record of the same may be kept by the student. An year end test on the activity may be conducted. The weightage are as under:

1) The activities performed by the student through out the year and record keeping : 5 marks

2) Assessment of the activity performed during the year end test: 3 marks Viva-voce : 2 marks

MATHEMATICS (Code No. - 041)

QUESTION PAPER DESIGN CLASS - XII

(2020 - 21)

Time: 3 hours **Max. Marks: 80**

S. No.	Typology of Questions	Total Marks	% Weightage
1	**Remembering:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. **Understanding:** Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	44	55
2	**Applying:** Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	20	25
3	**Analysing :** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations **Evaluating:** Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. **Creating:** Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions	16	20
	Total	80	100

1. *No chapter wise weightage. Care to be taken to cover all the chapters*
2. *Suitable internal variations may be made for generating various templates keeping the overall weightage to different form of questions and typology of questions same.*

Choice(s):

There will be no overall choice in the question paper.

However, 33% internal choices will be given in all the sections

INTERNAL ASSESSMENT	**20 MARKS**
Periodic Tests (Best 2 out of 3 tests conducted)	10 Marks
Mathematics Activities 10 Marks	

Note: For activities NCERT Lab Manual may be referred

SHIVALIK PUBLIC SCHOOL
Syllabus
Class : XII (2020-21)

PHYSICS (042)

(THEORY)

Time: 3 hrs. **Max Marks: 70**

		No. of Periods	Marks
Unit–I	**Electrostatics**	**23**	**16**
	Chapter–1: Electric Charges and Fields		
	Chapter–2: Electrostatic Potential and Capacitance		
Unit-II	**Current Electricity**	**15**	
	Chapter–3: Current Electricity		
Unit-III	**Magnetic Effects of Current and Magnetism**	**16**	**17**
	Chapter–4: Moving Charges and Magnetism		
	Chapter–5: Magnetism and Matter		
Unit-IV	**Electromagnetic Induction and Alternating Currents**	**19**	
	Chapter–6: Electromagnetic Induction		
	Chapter–7: Alternating Current		
Unit–V	**Electromagnetic Waves**	**02**	**18**
	Chapter–8: Electromagnetic Waves		
Unit–VI	**Optics**	**18**	
	Chapter–9: Ray Optics and Optical Instruments		
Unit –VII	**Chapter–10: Wave Optics**		
Unit–VIII	**Dual Nature of Radiation and Matter**	**07**	**12**
	Chapter–11: Dual Nature of Radiation and Matter		
Unit- IX	**Atoms and Nuclei**	**11**	
	Chapter–12: Atoms		
	Chapter–13: Nuclei		
Unit–X	**Electronic Devices**	**07**	**7**
	Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits		
Total		**118**	**70**

Unit I: Electrostatics 23 Periods

Chapter–1: Electric Charges and Fields

Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric fleld.

Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet .

Chapter–2: Electrostatic Potential and Capacitance

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.

Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.

PRACTICAL: 1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current.

Unit II: Current Electricity 15 Periods

Chapter–3: Current Electricity

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, temperature dependence of resistance.

Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's laws and simple applications, Wheatstone bridge, metre bridge(**qualitative ideas only**)

Potentiometer - principle and its applications to measure potential difference and for comparing EMF of two cells; measurement of internal resistance of a cell. (**qualitative ideas only**)

PRACTICAL: 2.To find resistance of a given wire using metre bridge and hence determine the resistivity (specific resistance) of its material.

OR

To verify the laws of combination (series) OR (parallel) of resistances using a metre bridge.

Unit III: Magnetic Effects of Current and Magnetism 16 Periods

Chapter–4: Moving Charges and Magnetism

Concept of magnetic field, Oersted's experiment.

Biot - Savart law and its application to current carrying circular loop.

Ampere's law and its applications to infinitely long straight wire. Straight and toroidal solenoids (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields.

Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Chapter–5: Magnetism and Matter

Current loop as a magnetic dipole and its magnetic dipole moment, magnetic dipole moment of a revolving electron, bar magnet as an equivalent solenoid, magnetic field lines; earth's magnetic field and magnetic elements.

PRACTICAL: 3 .To compare the EMF of two given primary cells using potentiometer.

OR

To determine the internal resistance of given primary cell using potentiometer.

Unit IV: Electromagnetic Induction and Alternating Currents 19 Periods

Chapter–6: Electromagnetic Induction

Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Eddy currents. Self and mutual induction.

Chapter–7: Alternating Current

Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits.

AC generator and transformer.

PRACTICAL: 4.To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.

Unit V: Electromagnetic waves 02 Periods

Chapter–8: Electromagnetic 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 their uses.

PRACTICAL: 5.To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.

OR. To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.

Unit VI: Optics 18 Periods

Chapter–9: Ray Optics and Optical Instruments

Ray Optics: Refraction of light, total internal reflection and its applications, optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism.

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

PRACTICAL: 6.To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v.

UNIT – VII: Chapter–10: Wave Optics

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.

PRACTICAL: 7.To find the focal length of a convex mirror, using a convex lens.

OR

To find the focal length of a concave lens, using a convex lens.

Unit VIII: Dual Nature of Radiation and Matter 07 Periods

Chapter–11: 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.

PRACTICAL: 8. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.

Unit IX: Atoms and Nuclei 11 Periods

Chapter–12: Atoms

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.

Chapter–13: Nuclei

Composition and size of nucleus.

Nuclear force Mass-energy relation, mass defect; nuclear fission, nuclear fusion.

PRACTICAL: 9.To draw the I-V characteristic curve for a p-n junction in forward bias and reverse bias.

Unit X: Electronic Devices 07 Periods

Chapter–14: 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 ceII.

ACTIVITIES: SECTION A 1.To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.

2.To assemble the components of a given electrical circuit.

3.To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

SECTION B.

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
2.To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
3. To observe diffraction of light due to a thin slit.

PRACTICALS (Total Periods 30)

The record to be submitted by the students at the time of their annual examination has to include:

- **Record of at least 8 Experiments [with a minimum of 4 from each section], to be performed by the students.**
- **Record of at least 6 Activities [with 3 each from section A and section B], to be demonstrated by teacher.**

Evaluation Scheme

Time Allowed: Three hours **Max. Marks: 30**

Two experiments one from each section	**8 + 8 Marks**
Practical record [experiments and activities]	**7 Marks**
Viva on experiments and activities	**7 Marks**
Total	**30 marks**

Prescribed Books:

1. **Physics, Class XII, Part -I and II, Published by NCERT.**
2. **Laboratory Manual of Physics for class XII Published by NCERT.**
3. **The list of other related books and manuals brought out by NCERT (consider multimedia also).**

QUESTION PAPER DESIGN (Class: XI/XII)

Board Examination –Theory

Maximum Marks: 70 **Duration: 3 hrs.**

S	Typology of Questions					Total Marks	Approx Perce Ntage
1	Remembering: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.					27	38%
2	Understanding: Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas						
3	Applying: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.					22	32%
4	Analysing and Evaluating: Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations					21	30%

	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.						
5	**Creating: Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.**						
	Total					**70**	**100**

Practical: 30 Marks

Note:

1. **Internal Choice: There is no overall choice in the paper. However, there will be at least 33% internal choice.**
2. **The above template is only a sample. Suitable internal variations may be made for generating similar templates keeping the overall weightage to different form of questions and typology of questions same.**

SHIVALIK PUBLIC SCHOOL
Syllabus
Class : XII (2020-21)
CHEMISTRY (043)

Prescribed Books:

1. Chemistry Part -I, Class-XII, Published by NCERT.

2. Chemistry Part -II, Class-XII, Published by NCERT.

Rationale

Higher Secondary is the most crucial stage of school education because at this juncture specialized discipline based, content -oriented courses are introduced. Students reach this stage after 10 years of general education and opt for Chemistry with a purpose of pursuing their career in basic sciences or professional courses like medicine, engineering, technology and study courses in applied areas of science and technology at tertiary level. Therefore, there is a need to provide learners with sufficient conceptual background of Chemistry, which will make them competent to meet the challenges of academic and professional courses after the senior secondary stage.

The new and updated curriculum is based on disciplinary approach with rigour and depth taking care that the syllabus is not heavy and at the same time it is comparable to the international level. The knowledge related to the subject of Chemistry has undergone tremendous changes during the past one decade. Many new areas like synthetic materials, bio -molecules, natural resources, industrial chemistry are coming in a big way and deserve to be an integral part of chemistry syllabus at senior secondary stage. At international level, new formulations and nomenclature of elements and compounds, symbols and units of physical quantities floated by scientific bodies like IUPAC and CGPM are of immense importance and need to be incorporated in the updated syllabus. The revised syllabus takes care of all these aspects. Greater emphasis has been laid on use of new nomenclature, symbols and formulations,teaching of fundamental concepts, application of concepts in chemistry to industry/ technology, logical sequencing of units, removal of obsolete content and repetition, etc.

OBJECTIVES

The broad objectives of teaching Chemistry at Senior Secondary Stage are:

- promote understanding of basic facts and concepts in chemistry while retaining the excitement of chemistry.

- make students capable of studying chemistry in academic and professional courses (such as medicine, engineering, technology) at tertiary level.
- expose the students to various emerging new areas of chemistry and apprise them with their relevance in future studies and their application in various spheres of chemical sciences and technology.
- equip students to face various challenges related to health, nutrition, environment, population, weather, industries and agriculture.
- develop problem solving skills in students.
- expose the students to different processes used in industries and their technological applications.
- apprise students with interface of chemistry with other disciplines of science such as physics, biology, geology, engineering etc.
- acquaint students with different aspects of chemistry used in daily life.
- develop an interest in students to study chemistry as a discipline.
- integrate life skills and values in the context of chemistry.

COURSE STRUCTURE

Total Periods

(Theory 98 + Practical 36)

Time :3Hours **Marks 70**

Unit No.	Title	No. of Periods	Marks
Unit I	Solid State	8	23
Unit II	Solutions	8	
Unit III	Electrochemistry	7	
Unit IV	Chemical Kinetics	5	
Unit V	Surface Chemistry	5	
Unit VII	p -Block Elements	7	19
Unit VIII	d and f Block Elements	7	
Unit IX	Coordination Compounds	8	
Unit X	Haloalkanes and Haloarenes	9	28
Unit XI	Alcohols, Phenols and Ethers	9	
Unit XII	Aldehydes, Ketones and Carboxylic Acids	10	
Unit XIII	Amines	7	
Unit XIV	Biomolecules	8	
	TOTAL	**98**	**70**

Unit I:

Solid State **(8 Periods)**

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea). Unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects.

KEY WORDS- Ionic solids, covalent solids ,metallic solids, Frenkel defect Schottky defect, Radius ratio , Packing efficiency, Coordination number, pseudo solids, anisotropy, unit cell, imperfections, F-centre.

Solutions **(8 Periods)**

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties - relative lowering of vapour pressure, Raoult's law,elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties.

KEY WORDS-Osmotic pressure , Depression of freezing point ,Elevation of boiling point Azeotropes, Raoult's law , Henry's Law , Normality , Molarity , Molality, Mole fraction, ideal and non-ideal solution, colligative property, molal elevation constant or ebullioscopic constant, molal depression constant or molal cryoscopic constant., endo-osmosis, exo-osmosis, isotonic solutions.

Unit II

Electrochemistry **(7 Periods)**

Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell.

KEY WORDS : Cathodic protection, Molar conductivity, Electro chemical series, Equivalent conductance,Specific conductance. strong and weak electrolytes,Electrochemical cell,Electrolytic cell, conductance, specific conductance.

Chemical Kinetics **(5 Periods)**

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions).

KEY WORDS Differential rate law, Integrated rate equation ,The rate law, Rate determining step , Activated complex , Activation energy , Half- life of a reaction Order of a reaction , Molecularity , Rate constant, threshold energy, law of mass action.

UNIT III

Surface Chemistry (05 Periods)

Adsorption - physisorption and chemisorption, factors affecting adsorption of gases on solids,colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multimolecularand macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation.

KEY WORDS : Physisorption, chemisorption, Peptization , Multimolucular, Lyophillic ,Lyophobic, Multimolucular colloid , Macromolecular colloid, Sol and Gel ,Hardy- Schulze rule, Brownian movement Electrophoresis, Tyndall effect,gold number,coagulation,adsorbent,adsorbate,adsorption isobar,micelles.

UNIT IV: "p"-Block Elements (7 Periods)

Group -15 Elements: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; compounds of nitrogen, preparation and properties of ammonia and nitric acid.

Group 16 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties, dioxygen: Preparation, Properties and uses, classification of Oxides, Ozone, Sulphur -allotropic forms; compounds of Sulphur: Preparation Properties and uses of Sulphur-dioxide, properties and uses; Oxoacids of Sulphur (Structures only).

Group 17 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens, Preparation, properties and uses of Chlorine and Hydrochloric acid, interhalogen compounds, Oxoacids of halogens (structures only).

Group 18 Elements: General introduction, electronic configuration, occurrence, trends in physical and chemical properties, uses.

KEY WORDS- Oxidation state, Atomic size, Ionization enthalpy ,Electro negativity , Disproportionation reaction, Aerosols Electro negativity, Hydrogen bonding ,Inert pair effect, interhalogens, pseudohalides.

UNIT V: "d" and "f" Block Elements (7 Periods)

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.

Lanthanoids - Electronic configuration, oxidation states, lanthanoid contraction and its consequences.

KEY WORDS- Magnetic moment, Reducing agent, oxo anions, Amphoteric nature, Disproportionation reaction, Interstitial compounds, Enthalpies of atomization, Lanthanoid contraction, Baeyer's reagent, coinage metals.

Coordination Compounds (8 Periods)

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT;

KEY WORDS Co-ordination compounds, Co-ordination Complex, Co-ordination Sphere, Double salts,Crystal field splitting energy(CFSE), Diamagnetic, Ligand, Chelate, Chelating effect, Coordination number,Ligand,

UNIT VI: Haloalkanes and Haloarenes. (9 Periods)

Haloalkanes: Nomenclature, nature of C -X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation.

Haloarenes: Nature of C -X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only).

KEY WORDS :Achiral, alkyl halides, allylic halides,ambident nucleophiles,carbocation, dextrorotatory,diazonium salts,electrophillic substitution,elimination reaction,,grignard reagent, optically active,stereo centre.

UNIT VII: Alcohols, Phenols and Ethers (9 Periods)

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration.

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophillic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

KEY WORDS Acidity, Aromatic ring, Benzylic alcohols, Cumene, Dehydrogenation, Electrophillic aromatic substitution, Polyhydric compounds, Vinylic alcohol,ferric chloride test for phenols. iodoform test, lucas test.

UNIT VIII: Aldehydes, Ketones and Carboxylic Acids (10 Periods)

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.

KEY WORDS Aldehydes, Phenol, benzoic acid, Benzophenone, Acetophenone , Benzaldehyde, Acetaldehyde , Electrophilic substitution, Inductive Effect, Aldol

Condensation, Alkyl benzenes, Bacyer's reagent, Electron donating groups, Electron withdrawing groups, Ozonolysis, Polarity,Cannizzaro reaction,
cross-aldol condensation,tollen's test,Fehling's test, estertest, acetal. cyanohydrin, ketal, oxime, imine.

UNIT IX: AMINES (7 Periods)

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

KEY WORDS Zwitter ion Aniline Nitration Ammonolysis Primary, secondary and tertiary amines. Aromatic amines Quaternary ammonium salts, acylation, ammonolysis, carbylamines.

UNIT 10

Biomolecules (8 Periods)

Carbohydrates - Classification (aldoses and ketoses), monosaccahrides (glucose and fructose), D-L configuration

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;

Nucleic Acids: DNA and RNA.

KEY WORDS Aldopentose, amino acids, amylopectin, amylase, animal starch, oligosaccharides, polysaccharides denaturation of proteins, globular proteins, nucleoside, nucleotide, peptide linkage, Zwitter ion.

PRACTICALS

Evaluation Scheme for Examination	**Marks**
Volumetric Analysis	08
Salt Analysis	08
Content Based Experiment	06
Project Work	04
Class record and viva	04
Total	**30**

PRACTICAL SYLLABUS 36 Periods

Micro-chemical methods are available for several of the practical experiments. Wherever possible, such techniques should be used.

A.Chromatography

i) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rfvalues.
ii) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in Rf values to beprovided).

A. **Preparation of Inorganic Compounds**

Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum. Preparation of Potassium Ferric Oxalate.

B. **Tests for the functional groups present in organic compounds:**

Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (Primary) groups.

C. **Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given foodstuffs.**

D. **Determination of concentration/ molarity of $KMnO_4$ solution by titrating it against a standard solution of:**

i) Oxalic acid,
ii) Ferrous Ammonium Sulphate

(Students will be required to prepare standard solutions by weighing themselves).

E. **Qualitative analysis**

Determination of one cation and one anion in a given salt.

(Note: Insoluble salts excluded)

PROJECT

Scientific investigations involving laboratory testing and collecting information from other sources

A few suggested Projects.

- Study of the presence of oxalate ions in guava fruit at different stages ofripening.
- Study of quantity of casein present in different samples ofmilk.
- Preparation of soybean milk and its comparison with the natural milk with respect to curd formation, effect of temperature,etc.
- Study of the effect of Potassium Bisulphate as food preservative under various conditions (temperature, concentration, time,etc.)
- Study of digestion of starch by salivary amylase and effect of pH and temperature onit.
- Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, carrot juice,etc.

- Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi(cardamom).
- Study of common food adulterants in fat, oil, butter, sugar, turmeric power, chilli powder and pepper.

Note: Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

QUESTION PAPER DESIGN

CLASS –XII (2020-21)
CHEMISTRY

(Code No.043)

1. There shall be two different parts in the Board examination for the year 2020-21. The two-part Assessment will carry weightage of fifty percent for each section.
   Part A will be the objective type exams OMR/ Computer based test for the complete rationalized syllabus for 2020-21. It will comprise of MCQ as well asAssertion/ Reasoning type questions. MCQ and Assertion/ Reasoning type questions will include the format of case based/ source based/ integrated questions.
   Part B will be a subjective/descriptive type test for the complete rationalized syllabus for 2020-21, announced by the board and that will be held with the objective type test.
2. No chapter wise weightage. Care to be taken to cover all thechapters.
3. Suitable *internal variations may be made for generating varioustemplates.*
4. **Choice(s):**

- There will be no overall choice in the questionpaper.Howeverinternal choices will be given in all thesections.
- 33% Choice will be given in both sections (Part A and Part B) separately

PART A: Objective type Paper

Type	Marks for each question	No. of Questions	Total Marks	Percentage
Objective	1	19	19	54.29
	2	5	10	28.57
CaseBased	3	2	6	17.14
Total		**26**	**35**	**100**

PART B: Descriptive paper

Type	Marks for each question	No. of Questions	Total Marks	percentage
Short Answer- I	2	4	8	22.86
Short Answer- II	3	4	12	34.28
Long Answer	5	3	15	42.86
Total		**11**	**35**	**100**

QUESTION PAPER DESIGN

S.No	Domains	Total Marks	%
1	**Remembering and Understanding:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts and answers. Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas.	28	40
2	**Applying:** Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	21	30
3	**Analysing, Evaluating and Creating:** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria. Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	21	30

SHIVALIK PUBLIC SCHOOL
Syllabus
Class : XII (2020-21)
English Core (Subject code : 301)

Prescribed Books

1. Flamingo: English Reader published by National Council of Education Research and Training, New Delhi

2. Vistas: Supplementary Reader published by National Council of Education Research and Training, NewDelhi

PART A 40 MARKS

Reading Comprehension 20 Marks

I. Multiple Choice questions based on one unseen passage to assess comprehension, interpretation and inference. Vocabulary and inference of meaning will also be assessed. The passage may be factual, descriptive or literary. Ten out of eleven questions to be done. (**10x1=10 Marks)**

II. Multiple Choice questions based on one unseen **case-based** factual passage with verbal/visual inputs like statistical data, charts, newspaper report etc. Ten out of eleven questions to be done.(**10x1=10 Marks)**

Note: The combined word limit for both the passages will be 700-750 words.

Literature 20 Marks

III. Multiple Choice Questions based on two prose extracts, one each from the books **Flamingo and Vistas,** to assess comprehension and appreciation. Refer to the lines to answer questions based on the given extract. Any 2 out of 3extracts to be done.**(8x1=8)**

IV. Multiple Choice Questions based on a poetry extract from the book **Flamingo** to assess comprehension, analysis and inference. Refer to the lines to answer questions based on the given extract. Any 1 out of 2 extracts to be done.**(4x1=4)**

VI. Text based questions interpretation from the books done.**(8x1=8)**

to assess comprehension, analysis, inference and

Flamingo and Vistas. Eight out of ten questions to be

PART B (SUBJECTIVE QUESTIONS) - 40 MARKS

Writing Section: 16 Marks

Q1. Short writing task –Notice/Advertisement up to 50 words. One out of the two given questions to be answered.**(3 Marks**: Format : 1 / Content : 1 / Expression : 1).

Q2. Short writing task –Formal/Informal Invitation and Reply up to 50 words.One out of the two given questions to be answered.**(3 Marks**: Format : 1 / Content : 1 / Expression : 1)

Q3. Letters based on verbal/visual input, to be answered in approximately 120-150 words. Letter types include application for a job, Letters to the editor (giving suggestions or opinion on issues of public interest) . One out of the two given questions to be answered (**5 Marks** :Format: 1 / Content: 2 / Expression: 2)

Q4. Article/ Report Writing, descriptive and analytical in nature, based on verbal inputs, to be answered in 120-150 words. One out of the two given questions to be answered **(5Marks:**Format : 1 / Content : 2 / Expression : 2)

Literature Section: 24 Marks

Q6. **Five** Short answer type question, **out of six, from Prose and Poetry from the book Flamingo,** to be answered in 30-40 words. Questions should elicit inferential responses through critical thinking.**(5x2=10)**

Q7. **Two** Short answer type question ,out of three, from **Prose (Vistas),** to be answered in 30-40 words. Questions should elicit inferential responses through critical thinking.

(2x2=4)

Q 8. **One** Long answer type question, from **Prose/poetry (Flamingo),** to be answered in 120-150 words to assess global comprehension and extrapolation beyond the text. Questions to provide evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done.**(1x5=5)**

Q.9 One Long answer type question, based on the chapters from the book **Vistas**, to be answered in 120-150 words to assess global comprehension and extrapolation beyond the text. Questions to provide evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done.**(1x5=5)**

Periodic Assessment

One Paper **1 hour**

Marks:25

Section	Area of Learning	Marks specified
Part A	Reading Unseen Passages	5
Extracts		3
Part B	Writing Skills	5
C	Textual Questions	4+2 = 6
Long answer		3+ 3 = 6

Annual Assessment

One Paper **3 hours** **Marks: 80**

Section	**Area of Learning**	**Marks specified**
Part A	Reading Unseen Passages (2)	10+10 = 20
	Multiple Choice from Literature (based on prose,poetry extracts Flamingo &Vistas)	8+4+8 =20
Part B	Advanced Writing Skills	3+3+5+5 =16
	Textual Questions	
	Literature Reader- Flamingo	10+4+5+5 =24
	Suppl. Reader - Vistas	

Unit wise distribution of syllabus

Unit I

L. Reader : Poem- My mother at 66

(Key Words- ashen, corpse, sprinting, spilling, wan, ache)

Ch.1- The Last Lesson

(Key Words-bustle, unison, solemn, reproach, enslaved, rapt, logical, primer, gesture, thunderclap, apprentice)

S. Reader : Ch 1 The Third Level

(Key words- futuristic, intersection, derby, premium, spittoons, ducked Arched, protectors, apparent, illogicality)

Writing Skills : Advertisement- Classified Ads, Notice writing

Activity : Practice of listening skill

Speech on “Preserving Language Preserves Identity”

Unit II

L. Reader : Ch.2- Lost Spring

(Key words- scrounging, glibly, bleak, perpetual, periphery, metaphorically, squatters, unkempt, sanctity, apathy, vicious)

Writing Skills : Advertisement- Display Ads, Article writing
Reading Skills : Practice of Unseen Passage
Activity : Card Making on Mother's Day (Work Experience)

Unit III

L. Reader : Poem- An Elementary School Classroom in a Slum

(Key words- gusty, heir, gnarled, capes, azure, cramped)

: Ch.3- Deep Water

(Key Words-phobia, treacherous, misadventure, aversion, bruiser, summoned, oblivion, paralysed, panicky, nightmare, handicap, haunting, terror)

Writing Skills : Job Applications , Article Writing
Reading Skills : Practice of Unseen Passage
Activity : Practice of listening skill

Unit IV

L. Reader : Chapter – 4 The Rattrap

(Key words-plods, incredulous, forge, valet, jagged)

S. Reader : Ch.4- The Enemy

(Key Words-stupor, resolution, strewed, repulsion, conviction, retching, ruthless, assassins, stubbornness,execution, prejudice)

Writing Skills , Report Writing Letter Writing (Editor)
Reading Skills : Practice of unseen passage
Activity : Practice of Speaking skill- (Expressing Opinion)
"If you were in Dr. Sadao's place what would you have done?"

Unit V

L. Reader : Poem – Keeping Quiet

(Key words- exotic, inactivity, truck, interrupt)

Chapter – 5 Indigo

(Key words- delegates, emaciated, tenacity, chided, vehemently)

Writing Skills : Formaland Informal Invitation and replies.
Reading Skills : Practice of Comprehension Passage
Activity : Practice of Listening & Speaking skill

Unit VI

S. Reader : Chapter – 5 Should Wizard Hit Mommy
(Key words-spell, fatiguing, swamp, fuss, ivory)

Writing Skills :Article Writing, Letter Writing (Letter to Editors)
Reading Skills Practice of unseen passage
Activity :Practice of Listening& speaking skill

Unit VII
L. Reader : Poem – A Thing of Beauty
(Key words-nothingness, dearth, rills, grandeur, brink)

S. Reader : Chapter – 6 On the Face of it
(Key words-startled, whispered, peculiar, daft, Steady)
Writing Skill : Formal and Informal Invitation Writing ,
Formal Letter Writing
Reading Skill : Practice of Unseen Passage
Activity : Practice of listening skill
: Report Writing on Science Symposium in your school

Unit VIII
S. Reader Chapter 7 Evan Tries an O Level
(Key Words: Congenital, Kleptomaniac, Incommunicado, Reiterated, Contemptuous, Amiable, Demeanour, Impersonating)

writing Skill : Formal and Informal Letter Writing ,
Article Writing
Reading Skills: Practice of Unseen Passage
Activity : Practice of listening skill

Unit IX
L. Reader :Poem : Aunt Jennifer's Tigers

(Key words : Prance, Chivalric, Fluttering, Terrified, Ordeals, Panel, Sleek)

Writing Skill : Formal and Informal Letter Writing, Article Writing
Activity : Practice of listening skill

Unit X Revision of Unit 1 &2

Writing Skill : Report Writing, Article Writing
Reading Skill: Practice of Unseen Passage
Activity : Practice of Listening & speaking skill