

St. Xavier's School, Doranda
Session 2021-22
CLASS X

ENGLISH LANGUAGE

1. Essay in 300 to 350 words - Descriptive, Argumentative, Narrative, stories with opening and concluding lines.
2. Letter formal and informal
3. Notice and E mail
4. Unseen passage with word meanings, questions, and précis
5. Grammar- Preposition, Synthesis, Transformation and correct form of verbs

- All the above topics to be included in all the three terms
- Unit Test 20 mark (June) First Term
- First Selection Test (80 marks) (13th July)
- **Project (20 marks)**
 - Words followed by Preposition words to be selected according to alphabetical order- A to L (50 words)
 - Phrasal verbs – 50

ENGLISH LITERATURE

TOPICS (FIRST TERM)

- | | | |
|---|---------------------------------------|--|
| 1 | I Know Why the Caged Bird sings(poem) | 1 st & 2 nd week April |
| 2 | The little Match Girl (prose) | 3 rd week April |
| 3 | Act 2 scene vi | 3 rd ,4 th week April |
| 4 | The Little Match Girl (cont) | April -June |
| 5 | Act 2 scene vi, vii, viii & ix | April - June |

UNIT TEST (20 MARKS) MAY – I Know Why the Caged Bird Sings, Merchant of Venice Act II Sc vii, viii, ix

- | | | |
|---|-----------------------------------|---|
| 6 | My Greatest Olympic Prize (prose) | 1 st & 2 nd week June |
| 7 | Act 3 scene i& ii | 1 st & 2 nd week June |
| 8 | Act 3 scene iii & iv | 1 st week July |

FIRST SELECTION TEST

2nd&3rd week July

- | | | |
|----|-------------------------------|--|
| 1. | The Blue Bead (prose) | 1 st & 2 nd week August |
| 2. | The Patriot (poem) | 3 rd week August |
| 3. | Act 3 scene v & Act 4 scene i | 1 st & 2 nd week September |
| 4. | Abou Ben Adhem (poem) | 3 rd week September |
| 5. | Act 4 scene i& ii | 1 st & 2 nd week October |
| 6. | All summer in a day (prose) | 4 th week October |
| 7. | All summer in a day (cont) | 2 nd week November |

8. Act 5

3rd& 4th week November

SECOND SELECTION TEST

8th December

- **UNIT TEST** (June) Act II scene vii, viii, ix; I Know Why the Caged Bird Sings
- **FIRST SELECTION TEST** (Portion of class IX and topics covered in class X)
- **PROJECT:** 'Racism is a belief that certain people are superior based solely on race' Elucidate this statement with reference to
 - 1) The Cold within
 - 2) I know why the caged Bird sings
 - 3) MY Greatest Olympic Prize
 - 4) Racism as apparent in 'The Merchant of Venice'

HINDI

1st Selection - Section-A(40 Marks)

(1) भाषा - सरस हिन्दी व्याकरण (तीनों परीक्षाओं के लिए)

1. प्रस्तावना - 10-20

2. चित्र लेखन - 6-8

3. पत्र -क- औपचारिक - 1-5

ख- अनौपचारिक -14-18

4. भाव ग्रहण - 1-4

5. व्यावहारिक व्याकरण- (संपूर्ण)

Section-B(40 marks)

(2) साहित्य सागर - गद्य - 1. भीड़ में खोया आदमी

2. अपना-अपना भाग्य

3. संदेह

पद्य - 1. भिक्षुक

2. चलना हमारा काम है

3. मातृ मंदिर की ओर

Unit Test – 1 . संदेह

2. व्यावहारिक व्याकरण

परियोजना कार्य - राष्ट्र और विद्यार्थी

Second Selection

Section -A

(1) भाषा - सरस हिन्दी व्याकरण

1. प्रस्तावना - (संपूर्ण)

2. चित्र लेखन - (संपूर्ण)

3. पत्र -क- औपचारिक - (संपूर्ण)

ख- अनौपचारिक - (संपूर्ण)

4. भाव ग्रहण - (संपूर्ण)

5. व्यावहारिक व्याकरण- (संपूर्ण)

Section-B

Section-B(40 marks)

(2) साहित्य सागर - गद्य - संपूर्ण पाठ (1-10)

पद्य - संपूर्ण पाठ (1-10)

Mathematics

FIRST TERMINAL

1.Quadratic Equations:-

Introduction, examine the nature of the roots, solving quadratic equation by factorization and formula,

2.Solving Problems(based on Quadratic equation):-based on numbers, time and work, geometrical figures, distance. Speed and time ,miscellaneous problems

3.Banking :-Recurring deposit account, computing maturity value of a recurring account

4. Linear Inequation:- Solving a linear Inequation algebraically, Representation of the solution on the number line.

5. Ratio and Proportion:- Ratio, composition of ratios, Proportion Properties of Proportion and its application.

6. Remainder and Factor Theorems;- Remainder theorem, Factor theorem, factorise the given polynomial

7. Matrices:- Order of matrix, Addition, Subtraction, Solving Matrix Equations, Multiplication of matrices,

8. Arithmetic progression:- General term of an A.P. Sum of an A.P. arithmetic mean, Word problems

9. Geometric Progression, General term of G.P. Properties of G.P. sum, geometric mean between the numbers.

10. Goods and services tax:- computation of tax, input tax credit,

11. Shares and Dividends:- Related formula, problems related to this.

First unit test

Quadratic Equations

Solving Problems (based on Quadratic equation)

Banking

Linear Inequation

Ratio and Proportion

Remainder and Factor Theorems

SECOND TERMINAL EXAM

12. Reflection:- reflection through axes and origin (graph paper), invariant points

13. Section and MidPoint Formula:- All the formulae related to this.

14. Equation of a line:- Basic concept inclination of a line, slope, parallel lines, perpendicular lines, x intercept and y intercept finding slope and y intercept of a given line

15. Similarity:- Similar triangle, Basic proportionality theory with application, relation between the areas of two triangles, similarity as size transformation, Applications to maps and models

16. Loci;- Definition, Theorem based on symmetry, Application

17. Circles;- Arc and its types, cyclic properties,

18. Tangents and Intersecting Chords:- theorems related,

19. Constructions:- Construction of Tangents to a given circle, circumscribed and inscribed circles of a triangle

20. Cylinder, cone and sphere:- Sums related to this, conversion of solids, combination of Solids

21. Trigonometrical identities:- Trigonometric Ratios, Identities, complementary angles, Trigonometrical tables,

22. Heights and Distances :- angles of elevation and depression,

THIRD TERMINAL EXAM

23. Graphical Representation:- Histogram, Ogive,

24. Measures of central tendency:- Mean (by all the three methods) median and mode.

25. Probability:- Measurement of Probability

All the Chapters of first and second term.

Months wise break up

March:- 1. Quadratic Equations:-

Introduction, examine the nature of the roots, solving quadratic equation by factorization and formula,

April:- 2. Solving Problems (based on Quadratic equation):- based on numbers, time and work, geometrical figures, distance. Speed and time, miscellaneous problems

3. Banking :- Recurring deposit account, computing maturity value of a recurring account

May

4. Linear Inequation:- Solving a linear Inequation algebraically, Representation of the solution on the number line.

5. Ratio and Proportion:- Ratio, composition of ratios, Proportion Properties of Proportion and its application.

6. Remainder and Factor Theorems;- Remainder theorem, Factor theorem, factorise the given polynomial

June :- 7. Matrices:- Order of matrix, Addition, Subtraction, Solving Matrix Equations, Multiplication of matrices,

8. Arithmetic progression:- General term of an A.P. Sum of an A.P. arithmetic mean, Word problems

July :- 9. Geometric Progression, General term of G.P. Properties of G.P. sum, geometric mean between the numbers.

10. Goods and services tax:- computation of tax, input tax credit,

11. Shares and Dividends:- Related formula, problems related to this.

August

12. Reflection:- reflection through axes and origin (graph paper), invariant points

13. Section and MidPoint Formula:- All the formulae related to this.

14. Equation of a line:- Basic concept inclination of a line, slope, parallel lines, perpendicular lines, x intercept and y intercept finding slope and y intercept of a given line

September

15. Similarity:- Similar triangle, Basic proportionality theory with application, relation between the areas of two triangles, similarity as size transformation, Applications to maps and models

16. Loci;- Definition, Theorem based on symmetry, Application

17. Circles;- Arc and its types, cyclic properties,

October:- 18. Tangents and Intersecting Chords:- theorems related,

19. Constructions:- Construction of Tangents to a given circle, circumscribed and inscribed circles of a triangle

20. Cylinder, cone and sphere:- Sums related to this, conversion of solids, combination of Solids

November

21. Trigonometrical identities:- Trigonometric Ratios, Identities, complementary angles, Trigonometrical tables,

22. Heights and Distances :- angles of elevation and depression,

December +Jan=

23. Graphical Representation:- Histogram, Ogive,

24. Measures of central tendency:- Mean (by all the three methods) median and mode.

25. Probability:- Measurement of Probability

HISTORY AND CIVICS

MID- TERM

1. The Union Legislature [April] (3rd, 4th week) UNIT TEST

Meaning of the federal setup in India.

(i) **Lok Sabha** – term, composition, qualifications for membership. Parliamentary procedures: a brief idea of sessions, quorum, question hour, adjournment and no-confidence motion. Speaker- election and functions.

(ii) **Rajya Sabha**- composition, qualifications for membership, election, term, presiding officer.

Powers and functions of union parliament- (legislative, financial, judicial, electoral, amendment of the Constitution, control over executive). Exclusive powers of the two House

2. The Indian National Movement [May -1st, 2nd, week]

(a) The First War of Independence, 1857

Only the causes (political, socio-religious, economic and military) and consequences be tested.

3. Union Executive [June –3rd-4th week]

(a) The President:

Qualifications for election, composition of Electoral College, reason for indirect election, term of office, procedure for impeachment.

Powers (Executive, legislative, financial, judicial, discretionary and emergency)

(b) The Vice President: Qualification for election, term of office and powers

The Union Executive: The Prime Minister, the Union Cabinet and the Council of Ministers.

4. The First World War [June – 1st, 2nd week]

Causes (Nationalism and Imperialism, Armament Race, Division of Europe and Sarajevo crisis) and results (Treaty of Versailles, territorial rearrangements, formation of League of Nation).

5. Factors leading to the growth of Nationalism [July 1st week]

Economic exploitation, repressive colonial policies, socio- religious reform movement (Brief mention of contribution of Raja Rammohan Roy and JyotibaPhule) and role of the press

6. The rise of Dictatorship [July 2nd week]

FINAL TERM

1.First phase of the Indian National Movement (1905-1907) [July 5th week]

2. The Union Judiciary: The Supreme Court [August]

3. a)Second Phase of the Indian National Movement :Partition of Bengal and other Developments [September 1st week]

4. The second World War- causes (Dissatisfaction with the Treaty of Versailles, Rise of Fascism and Nazism, Policy of Appeasement, Japanese invasion in China, Failure of League of Nations and Hitler's invasion in Poland). Brief mention of the bombing of Hiroshima and Nagasaki. Consequences (Defeat of Axis Powers, formation of the United Nations and Cold War [September 2nd, 3rd WEEK]

5. United Nations Organizations: Origin, Objectives and the Principal Organ [September 3rd, 4th week]

6. Major Agencies of the United Nations.

7. The State Judiciary: The High Court. [September 4th, October 2nd week]

8. The Subordinate Courts.

9. Factors leading to the Formation of the Muslim League [October 4th week]

10. National Movement during the First World War: Lucknow Pact and other Developments [October 4th Week]

11. National Movement: 1919 – 1942 {Non- cooperation movement, Civil Disobedience Movement and other forces at work. The Cripps Mission and Quit India Movement} [November]

12. Forward Bloc and INA [November]

13. Non Aligned Movement.[November]

14. Independence and Partition of India. [November]

[Revision of the entire syllabus]

[PROJECT TOPIC: Factors promoting the growth of Nationalism ...with special reference to the contributions made by Raja Ram Mohan Roy, Jyotirao Phule and the press.]

DATE OF SUBMISSION: 12th November 2021.

Geography

FIRST TERM:

1. Map Study: Interpretation of Topographical Maps
2. The Climate of India – Distribution of Temperature, rainfall, winds in summer and winter and Factors affecting the climate of the area.
Monsoon and its mechanism.
Seasons – Summer, Monsoon, Retreating and Winter.
3. Soils of India
Types of soil – Alluvial, Black, Red and Laterite
Distribution, Composition and Characteristics such as colour, texture, minerals and crops associated.
Soil Erosion- causes, prevention and conservation.
4. Natural Vegetation of India
Importance of Forests
Types of vegetation – tropical evergreen, tropical deciduous, tropical desert, littoral and mountain.
Distribution and correlation with their environment
Forest conservation.
5. Water Resources
Sources – Surface and groundwater
Need for conservation and conservation practices – Rain water harvesting and its importance.

- Irrigation- importance and methods.
6. Map Work:
Location and Relief features of India
Climate
Soil

SECOND TERM:

1. Minerals and Energy Resources
Iron ore, manganese, copper, bauxite – Uses and their distribution
Conventional Sources: Coal, Petroleum, Natural gas (distribution, advantages and disadvantages)
Hydel power: Bhakra Nangal and Hirakud Dam.
Non- Conventional Sources: Solar, wind, tidal, geo-thermal, nuclear and bio- gas (generation and advantages).
2. Transport
Importance and Modes – roadways, railways, airways and waterways – Advantages and Disadvantages
3. Waste Management
Impact of waste accumulation – spoilage of landscape, pollution, health hazards, effect on terrestrial, aquatic (fresh and marine) life.
Need for waste management
Methods of safe disposal- segregation, dumping and composting.
Need and methods of reducing, reusing and recycling waste.
4. Mineral based industries
Iron and Steel (TISCO, Bhilai, Rourkela, Vishakhapatnam), Petro Chemical and Electronics.
5. Map work:
Distribution of Minerals,
Cities and Population
6. Entire syllabus of First term

THIRD TERM:

1. Agriculture in India
Indian Agriculture- Importance, problems and reforms.
Types of farming in India – subsistence and commercial: shifting, intensive, extensive, plantation and mixed.
Agricultural seasons – rabi, kharif, zayad
Climatic conditions, soil requirements, methods of cultivation, processing and distribution of:
Rice, wheat, millets and pulses
Sugarcane, oilseeds (groundnut, mustard, soyabean)
Cotton, jute, tea and coffee
2. Agro based industries
Importance and classification
Sugar, Textile (Cotton and Silk)

3. Entire syllabus of First and Second Terms.

PROJECT: Development of tourism in Jharkhand

Physics

First term

1. Force:- Moment of force and equilibrium, centre of gravity, uniform circular motion
2. Work, Power and energy:-work, power and energy, its measurement, units and relations, Different forms of energy, Conservation of Energy and Numericals
3. Machine:-Technical terms and lever, Pulley
4. Refraction of light at plane surfaces:- Refraction ,laws of refraction and refractive index, Refraction of light through a prism, simple application of refraction of light, critical angle and total internal reflection
5. Refraction through a Lens:- lens and refraction of light through a lens ,formation of image by a lens,sign convention and lens formula. magnifying glass and application of lenses
6. Spectrum:-deviation ,dispersion and spectrum, Electromagnetic and its broad classification, scattering light and its application.

Second Term:-

7. Calorimetry:-Heat capacity,Specific heat capacity and its measurement,change of phase (state) and latent heat,Numericals

8.Current Electricity:-concept of charge, current potential, potential difference and resistance; OHM'S law,Electro-motive force,Terminal voltage and internal resistance of a cell;combination of resistors,Electrical energy and power

9.House hold Circuit:-Transmission of power and house wiring,some essential components of house wiring system.

10.Electromagnetism:-Magnetic effect of electric current, force on a current carrying conductor in a magnetic field and its application in D.C.motor, electromagnetic induction and its applications to A.C. generator and transformer.

First unit test

1.Force:- Moment of force and equilibrium, centre of gravity, uniform circular motion

2. Work, Power and energy:-work, power and energy, its measurement, units and relations, Different forms of energy, Conservation of Energy and Numericals

3.Machine:-Technical terms and lever, Pulley

Final Term:-

11. Radioactivity:-Atomic structure and Radioactivity, Nuclear fission and fusion

12.Sound:-Reflection of sound waves and Echoes, Natural, Damped and forced vibrations; Resonance Characteristics of sound .

Complete Syllabus

Month wise breakup

April

1.Force:- Moment of force and equilibrium, centre of gravity, uniform circular motion

2. Work, Power and energy:-work, power and energy, its measurement, units and relations, Different forms of energy, Conservation of Energy and Numericals.

June -July

3.Machine:-Technical terms and lever, Pulley

4.Refraction of light at plane surfaces:- Refraction ,laws of refraction and refractive index, Refraction of light through a prism, simple application of refraction of light, critical angle and total internal reflection

5. Refraction through a Lens:- lens and refraction of light through a lens ,formation of image by a lens, sign convention and lens formula. magnifying glass and application of lenses

6.Spectrum:-deviation ,dispersion and spectrum, Electromagnetic and its broad classification, scattering light and its application

July

7. Calorimetry:-Heat capacity, Specific heat capacity and its measurement, change of phase (state) and latent heat, Numericals

August

8.Current Electricity:-concept of charge, current potential, potential difference and resistance; OHM'S law,Electro-motive force,Terminal voltage and internal resistance of a cell;combination of resistors,Electrical energy and power

9.House hold Circuit:-Transmission of power and house wiring,some essential components of house wiring system.

September

9.House hold Circuit:-Transmission of power and house wiring,some essential components of house wiring system.

October

10.Electromagnetism:-Magnetic effect of electric current, force on a current carrying conductor in a magnetic field and its application in D.C.motor, electromagnetic induction and its applications to A.C.generator and transformer.

November

11. Radioactivity:-Atomic structure and Radioactivity,Nuclear fission and fusion

December

12.Sound:-Reflection of sound waves and Echoes, Natural, Damped and forced vibrations; Resonance Characteristics of sound .

January :-Revision

Subject - Chemistry

Topics	Month
1. Mole Concept	April
2.Organic Chemistry	June
3.Periodic Table	June & July
4.Chemical Bonding	July

5.Acids,Bases and Salts	August
6.Analytical Chemistry	August
7.Electrolysis	September
8.Metallurgy	October
9. HCl	November
10.NH ₃	November
11.H ₂ SO ₄	December
12.HNO ₃	December

First Terminal Examination

1.Mole Concept

2.Organic Chemistry

3.Periodic Table

Final Selection Examination

All topics will be included in the Final Term Examination.

Unit Test

Chemical Bonding (Electrovalent and Covalent Bonding)

BIOLOGY

FIRST TERM	FINAL TERM
<ul style="list-style-type: none"> • The Nervous System • Sense Organs • The Circulatory System • The Excretory System • The Endocrine System • The Reproductive System • Population: The Increasing Numbers and Rising Problems 	<ul style="list-style-type: none"> ● The Nervous System ● Sense Organs ● The Circulatory System ● The Excretory System ● The Endocrine System ● The Reproductive System ● Population: The Increasing Numbers and Rising Problems ● Human Evolution ● Absorption by Roots ● Transpiration ● Photosynthesis ● Chemical Coordination in Plants ● Structure of Chromosomes, Cell Cycle and Cell Division ● Genetics ● Pollution ● Cell

FIRST TERM

March 2021

Sense Organs

The Eyes

- Structure of the Eyeball
- Image formation, Accommodation, light and dark adaptation
- Common defects of the eye
 - Myopia, Hyperopia, Astigmatism, Presbyopia, Cataract, Night Blindness, Colour Blindness, Corneal opacities
- Stereoscopic Vision and after images

The Ear

- Structure of the ear
- Functions of the Ear – Hearing and Balancing

April - June 2021

The Circulatory System

- Need for transport inside the body
- Fluids in our body
- Properties and Composition of Blood
- Blood transfusions and Blood groups (ABO and Rh systems)
- Structure of the Heart – Chambers, Blood vessels entering and leaving the heart, Valves
 - Circulation of blood in the heart
 - Heartbeat and Heart sounds
 - Pacemaker
 - The Blood Vessels- Arteries, Veins and Capillaries (structure and function)
 - Hepatic Portal System
 - The Pulse
- Blood Pressure
- Lymph and Lymphatic System
- The Spleen- Functions of the Spleen

June 2021

The Excretory System

- Substances to be eliminated
- The Excretory Organs
- Internal structure of the kidney
- Structure of a kidney tubule
- Blood supply to the kidney tubules
- Urine formation – Ultrafiltration, Selective Reabsorption, Tubular Secretion

- Properties of urine
- Regulation of Urine output
- Osmo-regulation
- Artificial Kidney

Syllabus for Unit Test

1. The Nervous system

2. Sense Organs

3. The Circulatory System

June- July 2021

The Endocrine System

- Need For The Regulation of Body Activities
- General Properties of Hormones
- Endocrine Glands
- Adrenal Glands (Conditions due to Hyposecretion and Hypersecretion of the hormones from Adrenal Cortex and Adrenal Medulla)
- Pancreas (Conditions due to Hyposecretion and Hypersecretion of Insulin)
- Thyroid (Conditions due to Hyposecretion and Hypersecretion of the Thyroxin)
- Pituitary Gland (Conditions due to Hyposecretion and Hypersecretion of hormones)
- Control of hormonal secretions/ Feedback mechanism

The Reproductive System

- Reproduction in Humans
- Male Reproductive System – Structure and function of each part
- Female Reproductive System – Structure and function of each part
- Role of Hormones in Reproduction
- Menstrual Cycle
- Fertilisation
- Implantation and Pregnancy
- Amnion and Amniotic Fluid
- Placenta and its function
- Parturition
- Twins- Fraternal and Identical

Population- The Increasing Numbers and Rising Problems

- Rising Population- A Global Threat
- Population Explosion- A Serious Global Concern
- Factors Responsible For Population Explosion in India
- A few Statistical Terms
- Need for adopting Control Measures
- Population Education and Population Control

Portion for First Selection Examination

- The Nervous System
- Sense Organs
- The Circulatory System
- The Excretory System
- The Endocrine System
- The Reproductive System
- Population: The Increasing Numbers and Rising Problems

August- September 2021

Human Evolution

- What is Evolution?
- Theories of Evolution
 - Lamarck's theory of inheritance of acquired characters
 - Vestigial organs
 - Darwin's Theory of Natural Selection
- Human Evolution
 - Human ancestors
 - Homo sapiens sapiens

Absorption by Roots

- Absorption by the Roots
- Need of water and Minerals for Plants
- Characteristics of Roots for Absorbing Water
- Absorption and conduction of Water and Minerals
 - Imbibition, Diffusion, Osmosis and Osmotic Pressure
 - Active Transport
 - Turgidity and Flaccidity
- Uses of Turgidity to Plants
- Root Pressure
- Importance of Root Hair and the Upward Movement of Absorbed Water and Minerals
- Some Experiments on Absorption and Conduction of Water in Plants
- Forces Contributing to Ascent of Sap

Transpiration

- Transpiration
- Demonstration of Transpiration
- Measurement of Transpiration
- Kinds of Transpiration Stomatal, Cuticular, Lenticular Transpiration
 - Mechanism of Stomatal Transpiration
 - Factors that Affect Transpiration- External and Internal Factors
- Adaptations in Plants to Reduce Excessive Transpiration

- Significance of Transpiration
- Guttation and Bleeding

September-October 2021

Photosynthesis

- What is Photosynthesis?
- Chlorophyll- The Vital Plant Pigment
- Regulation of Stomatal Opening for Letting in Carbon Dioxide
- Opening and Closing of Stomata
- Potassium ion Concentration Theory
- Sugar Concentration Theory
- Process of Photosynthesis
- Two Main Phases of Photosynthesis - Light Dependent Phase and Light Independent Phase
- Adaptations in Leaf To Perform Photosynthesis
- End Result of the Products of Photosynthesis
- Factors Affecting Photosynthesis- External and Internal Factors
- Experiments on Photosynthesis
- Carbon Cycle

Chemical Coordination in Plants

- What are Plant Hormones?
- Auxins, Gibberellins, Cytokinins, Ethylene and Abscisic Acid
- Tropic Movements in Plants
- Phototropism, Geotropism, Hydrotropism, Thigmotropism, Chemotropism

Structure of Chromosomes, Cell Cycle and Cell Division

- What are Chromosomes
- Molecular Structure of DNA
- Structure of Chromosomes
- What are Genes
- Need for New Cells
- Cell Cycle
- Cell Division
- Mitosis (Karyokinesis and Cytokinesis)
- Differences in Mitosis in Plant and Animal Cells
- Significance of Mitosis
- Meiosis
- Significance of Meiosis

October- November 2021

Genetics

- Heredity and Variations
- Chromosomes- The Carriers of Heredity
- The two Main Categories of Chromosomes- Autosomes and Sex Chromosomes
- Sex Determination- Son or Daughter
- Chromosomes- Carriers of Genes
- Genes and their Alleles - Dominant and Recessive Alleles
- Genotype and Phenotype
- Sex Linked Inheritance- X linked Inheritance
- Mendel's Experiments on Inheritance
- Mendel's Laws of Inheritance
 - Law of Dominance
 - Law of Segregation
 - Law of Independent Assortment
- Mutation

Pollution

- Types of wastes
- Air pollution (causes and control)
- Water pollution (causes and control)
- Soil pollution (causes and control)
- Radiation (causes and control)
- Noise pollution (causes and control)
- Plastic pollution (causes and control)
- Effect of various types of pollution
- Control of pollution
- Swachh Bharat Abhiyan

Portion for Final Selection Examination

- **The Nervous System**
- **Sense Organs**
- **The Circulatory System**
- **The Excretory System**
- **The Endocrine System**
- **The Reproductive System**
- **Population: The Increasing Numbers and Rising Problems**
- **Human Evolution**
- **Absorption by Roots**
- **Transpiration**
- **Photosynthesis**
- **Chemical Coordination in Plants**
- **Structure of Chromosomes, Cell Cycle and Cell Division**
- **Genetics**

- Pollution
- Cell

Computer Applications

Syllabus for Class X(2021– 2022)

APRIL	<p>1. Using Library Classes Simple input/output. String, packages and import statements.libraries and illustrating their use. The following functions have to be covered String library functions: Char charAt (unt i),int compareTo(String1, String2)String concat(String str) boolean endsWith(String str)boolean equals(String str)boolean equalsIgnoreCase(String str)int indexOf(char ch)int lastIndexOf(char ch)int length()String replace (char oldChar,char newChar)boolean startsWith(String str)String substring(int beginIndex, int endIndex)String toLowerCase()String toUpperCase()String trim()String valueOf(all types), toString()Mathematical Library Functions:pow(x,y), log(x), sqrt(x), ceil(x), floor(x), rint(x),abs(a), max(a, b), min(a,b), random(), sin(x), cos(x),tan(x), asin(), acos(), atan().</p>
JUNE-JULY	<p>2.Functions Need of functions. Types of functions (pure and impure). Function declaration and definition, ways of calling functions (call by value and call by reference)Returning information/messages from the functions and use of multiple functions and more than one function with the same name (function overloading).Use of static data member with static member function. Discuss invocation of functions on objects (through the reference). Discuss the concept of this with a reference to the object on which the invocation is made again.</p>
JULY-AUGUST	<p>3. Iterations. Loops, nested loops, break and continue.Revision of loops (while, do while and for).Show how each kind of loop can be converted to the other form of the loop. Introduce nested loops through some simple examples. Demonstrate break and continue statements with the help of loops/nested loops.</p>
AUGUST	<p>4. Class as the Basis of all Computation Objects and ClassesObjects encapsulate state and behaviour æ numerous examples; member variables; attributes or features.Variables define state; member functions; Operations/methods/ messages/ functions define behaviour.Classes as abstractions for sets of objects; class as an object factory; concept of type, primitive data types,composite data types. Variable declarations for both types; difference between the two types. Objects as instances of a class.</p>
SEPTEMBER	<p>5. Class as a User Defined Type Class as a composite type, distinction between primitive type and composite or class types. Class may be considered as a new data type created by the user, that has its own functionality. (The distinction between primitive and composite types should be discussed through examples. Show how classes allow user defined types in programs. All primitive types have corresponding class wrappers. The following methods are to be covered: int parseInt(String s), int valueOf(String s),long parseLong(String s), long valueOf(String s),float parseFloat(String s), float valueOf(String s),double parseDouble(String s), double valueOf(String s), boolean isDigit(char ch),boolean isLetter(char ch),boolean isLetterOrDigit(char ch),boolean isLowerCase(char ch),boolean isUpperCase(char ch),boolean isWhitespace(char ch),char toLowerCase (char ch) toUpperCase(char ch)</p>

OCTOBER	6. Constructors Constructor and its types.Default constructor, parameterized constructor, constructor with default parameter and constructor overloading
	7. Encapsulation Access specifiers and scope and visibility Access specifiers α private and public. Visibility rules for private, package and public access specifiers. Scope of variables, instance variables, argument variables, local variables
NOVEMBER	8.Arrays Arrays storing, retrieving and arranging data, Arrays and their uses, sorting algorithms - selection sort and bubble sort; Search algorithms α linear search and binary search Example of a composite type. Array creation. Sorting and searching algorithms should be discussed
	9. Input/Output Basic input/output using Scanner and Printer classes from JDK.The Scanner class can be used for input of various types of data (e.g. int, float, char etc.) from the standard input stream.
December onwards	Revision Model Test papers

Project Work:

Part I: Write program for

- a) Fibonacci series upto N terms
- b) Find HCF & LCM OF 2 NUMBERS.
- c) Check if a number if Armstrong or not.
- d) Check if a number if Palindrome or not.
- e) Check if a number if Disarium or not.
- f) Write a menu driven program to find the area of a circle, triangle and rectangle.
- g) Write a menu driven program to convert celsius to Fahrenheit and vice versa.
- h) Write a program to check if a given character is an uppercase vowel or lower case vowel or not.
- i) Write a function to check if a triangle is valid or not taking three sides of a triangle.. If valid then state type of triangle.
- j) Write a program using function overloading to the following:
 - a) $S = 1 + 11 + 111 + \dots N \text{ terms}$
 - b) $S = X^5 + X^9 + X^{13} + \dots N \text{ terms}$

PART II: Will be given before summer vacation.

