



Gems Akademia International School

ACADEMIC YEAR 2022 - 2023

Compiled Syllabus of Grade XII

TERM – 1

English Language

A. Aims and Objectives:

To develop the ability to:

- derive, infer and critically assess information through listening.
- express oneself by speaking individually, or in a discussion.
- read with comprehension drawing information directly or by inference from the text, through an understanding of grammar and structure, vocabulary and idiom.
- employ a variety of skills in writing : within a framework, using argument or imagination or note making and summarizing.
- use the English language for the purpose of study and social and cultural interaction.
- speak and write clearly and to the purpose, using appropriate grammar, vocabulary and idiom.

Topics

1. Transformation of Sentences
2. Report Writing
3. Descriptive Essay
4. Tense
5. Narrative Essay
6. Argumentative Essay
7. Phrasal Verbs/ Preposition
8. Story Writing
9. Reflective Essay
10. Proposal writing
11. Comprehension
12. One word essay

English Literature

Aims and Objectives:

- To enjoy and appreciate literature through a critical study of selected literary works.
- Through the study of literature:
 - approach an understanding of humanity.
 - develop an interest in the thought and culture of the people of the world.
 - develop the power of expression and a sense of aesthetic values.

Topics

1. **Drama** – The Tempest-William Shakespeare Act III and IV
2. **Short Stories** 1. Story of an hour 2. Sound Machine 3. Singing Lesson
3. **Poetry** 1. Crossing the bar 2. Dover Beach 3. Darkling Thrush 4. We are the Music Makers
4. Internal Assessment-Project

HINDI

Sl No	TOPIC
1.	दासी
2.	गौरी
3.	संस्कृति क्या है ?
4.	तुलसी दस
5.	बादल को घिरते देखा है
6.	उद्यामी नर
7.	आषाढ का एक दिन
8.	मुहावरे
9.	वाक्य शोधन
10.	निबंध लेखन
11.	अपठित गद्यांश

BENGALI

Sl No	TOPIC
1	একটি তুলসীগাছের কাহিনি
2	কোনি ৯ থেকে ১৪
3	আদাব
4	যদি নির্বাসন দাও
5	বাবরের প্রার্থনা
6	স্বাধীনতা তুমি
7	প্রবন্ধ রচনা
8	বোধ পরীক্ষণ
9	শুদ্ধ শব্দ ও বাক্য
10	বাগধারা

PHYSICS

A. Aims and Objectives

- To enable candidates to acquire knowledge and to develop an understanding of the terms , facts, concepts, definitions, and fundamental laws, principles, processes in the field of Physics.
- To develop the ability to apply the knowledge and understanding of Physics to unfamiliar situations.
- To develop a scientific attitude through the study of Physics.
- To develop skills in -(a)the practical aspects of handling apparatus, recording observations and (b) drawing diagrams, graphs etc.
- To develop an appreciation of the contribution of Physics towards scientific and technological developments and towards human wellbeing.
- To develop an interest in the world of physical sciences.

B. Topics

1. Electrostatics

- Electric Charges and Fields.
- Gauss' Theorem.
- Electric Potential and Potential Energy.

(iv) Capacitors and Dielectrics.

2. Current Electricity

- (i) Electric Resistance and Ohm's Law.
- (ii) DC circuits and Measurement

3. Magnetic Effects of Current and Magnetism

- (i) Moving Charges and Magnetism.
- (ii) Torque on a Current-Loop: Moving-Coil Galvanometer.
- (iii) Magnetic Field and Earth's Magnetism.
- (iv) Magnetic Classification of Substances.

4. Electromagnetic Induction and Alternating Current

- (i) Electromagnetic Induction.
- (ii) Alternating Current

5. Electromagnetic Waves

6. Optics

- (i) Spherical Mirrors.
- (ii) Refraction of Light at Plane Interface: Total Internal Reflection.
- (iii) Refraction of Light at Spherical Surfaces: Lenses.
- (iv) Refraction and Dispersion of Light through a Prism.
- (v) Optical Instruments.
- (vi) Wave Nature of Light: Huygens' Principle.
- (vii) Interference of Light.
- (viii) Diffraction of Light.
- (ix) Polarisation of Light.

7. Dual Nature of Radiation and Matter

- (i) Photoelectric effect.
- (ii) Matter Waves

8. Atoms and Nuclei

(a) Atom

Origin of Spectra: Bohr's Theory of Hydrogen Atom

Revision

CHEMISTRY

A. Aims and objectives:

- To foster acquisition of knowledge and understanding of terms, concepts, facts, processes, techniques and principles relating to the subject of Chemistry.
- To develop the ability to apply the knowledge of contents and principles of Chemistry in new or unfamiliar situations.
- To develop skills in proper handling of apparatus and chemicals.
- To develop an ability to appreciate achievements in the field of Chemistry and its role in nature and society.

- To develop an interest in activities involving usage of the knowledge of Chemistry.
- To acquaint students with the emerging frontiers and interdisciplinary aspects of the subject.
- To develop skills relevant to the discipline.
- To apprise students with interface of Chemistry with other disciplines of Science.

B. Topics

- Solid State
- p - block elements
- Haloalkanes and Haloarenes
- Alcohols, phenols and ether
- Solutions
- Electrochemistry
- General Principles and Processes of Isolation of Elements

Practical:

1. Titrations
2. Study of the rate of reaction
3. Identification of the following compounds and functional groups based on observations
 - i. Alcoholic group - glycerol
 - ii. Aldehyde group- formaldehyde
 - iii. Ketonic group – acetone
 - iv. Carboxylic group – benzoic acid
 - v. Amino group - aniline
4. Characteristic tests of carbohydrates and proteins
5. Qualitative analysis: identification of single salt containing one anion and one cation.

MATHEMATICS

A. Aims and objectives:

- To enable candidates to acquire knowledge and to develop an understanding of the terms, concepts, symbols, definitions, processes and formulae of mathematics at the senior secondary stage.
- To develop the ability to apply the knowledge and understanding of Mathematics to unfamiliar situations or to new problems.
- To enhance ability of analytical and rational thinking in young minds.
- To develop skills of – computations, logical thinking, handling abstractions, generalizing patterns.
- To develop a scientific attitude through the study of Mathematics.

B. Topics

Relations and Functions

- Types of relations
- Binary Operations
- Functions
- Inverse Trigonometric Functions

Algebra

- Determinants

- Matrices

Calculus

- Continuity, Differentiability and Differentiation
- Indeterminate forms
- Application of Derivatives
- Integrals
- Indefinite Integrals

Section B

- Vectors

Section C

- Application of Calculus (in Commerce and Economics)

BIOLOGY

A. Aims and Objective:

- To enable candidates to acquire the knowledge and to develop an understanding of biological terms, concepts, facts, principles, formulae etc.
- To develop the ability to apply the knowledge of biology in unfamiliar situations.
- To develop experimental skills required in biology practical work.
- To develop the ability to appreciate biological phenomena in nature and the contribution of biology to human welfare.
- To develop interests in plants and animals and in their respective environments.
- To develop scientific attitude towards biological phenomena.

B. Topics

1. Reproduction in organisms
2. Sexual reproduction in flowering plants
3. Human reproduction
4. Reproductive health
5. Principles of inheritance and variation.
6. Molecular basis of inheritance
7. Evolution
8. Human health and diseases
9. Strategies for enhancement in food production
10. Microbes in human welfare
11. Biotechnology: Principles and process
12. Biotechnology and its applications
13. Organisms and population

C i) Practical

ii) Project

Computer Science

A. Aims and Objectives

- To understand algorithmic problem solving using data abstractions, functional and procedural abstractions, and object based and object-oriented abstractions. To develop logical and analytical thinking so that they can easily solve interactive programs.
- To understand: (a) how computers represent, store and process data at different levels of abstraction that mediate between the machine and the algorithmic problem solving level and (b) how they communicate with the outside world.

B. Topics

1. Boolean algebra.
2. Computer Hardware.
3. Implementation of algorithms to solve problems
4. Objects.
5. Primitive values, Wrapper classes, Types and casting.
6. Conditional Constructs in Java.
7. Variables, Expressions.
8. Statements, Scope.
9. Methods and Constructors.
10. String Handling.
11. Arrays
12. Packages.
13. Recursion
14. Basic data structures (stack)
15. Conversion of Infix to Prefix and Postfix notations.

Review of Class XI from Chapter 3 to Chapter 12. New higher order problems are solved using these constructs in Grade XII.

Accountancy

A. Aims and Objectives:

- Preparing financial statements in accordance with appropriate standards.
- Demonstrate an appropriate mastery of the knowledge, skills and tools of financial accounting principles and managerial accounting principles.
- Knowledge of sophisticated financial accounting topics such as partnership accounting and joint stock company
- Develop the ability to identify and evaluate accounting problems and arrive at reasoning and conclusions.

- Ability to evaluate financial results through examination of relevant data (i.e. cash flow statement)

B. Topics

1. Financial Statement Companies(Final Accounts of Companies)
2. Financial Statement of Analysis
3. Tools For Financial Statement of Analysis(Comparative Statements)
4. Tools For Financial Statement of Analysis(Common Size Statements)
5. Goodwill (Concept and Valuation)
6. Partnership Accounts(Fundamentals of Partnership)
7. Admission of a Partner
8. Retirement or Death of a Partner
9. Dissolution of Partnership Firm
10. Joint Stock Company Accounts (Issue of Shares)
11. Ratio Analysis

ECONOMICS

A. Aims and Objectives:

- To enable candidates to acquire knowledge and develop an understanding of facts, terms, concepts, hypothesis in economics.
- To acquaint the candidates with tools of economic analysis.
- To develop an understanding of important economic problems.

B. Topics

1. Demand and Law of demand.
2. Theory of consumer behaviour
3. Elasticity of demand.
4. Law of supply and elasticity of supply.
5. Market mechanism: equilibrium price and quantity in a competitive market.
6. Laws of returns
7. Cost and Revenue analysis.
8. Forms of market.
9. Producer's Equilibrium
10. Determination of equilibrium price and output under perfect competition.
11. Money: meaning and functions.

C. Project topics for grade XII economics:

1. Prepare a report on the competition in the aviation sector in India with reference to:
 - a. Performance of the public sector and private sector.
 - b. operational strategies adopted by budget/low-cost carriers.
2. Prepare a trend analysis of growth and productivity of Electronic and telecommunications in India for the last 10years.

COMMERCE

A. Aims and Objectives:

- To provide knowledge of the activities of commerce in the marketing of goods and services.
- To familiarise candidates with theoretical foundations, organising, managing and handling operations of a business firm.
- Develops an ability to critically examines new developments in the field of business, trade and Commerce
- Develop understating of capital structure of a company.

C. Topics

1. Business environment
2. Capital-Fixed and Working
3. Source of finance for a joint stock company
4. Banking-Latest Trends
5. Management- Meaning ,Nature and Importance
6. Principles of management
7. Function of management and coordination
8. Planning
9. Organising
10. Staffing
11. Directing

BUSINESS STUDIES

A. Aims and Objectives:

- To enable candidates to understand the modern business environment.
- Create that personality factors that are important for the success of business.
- Ability to suggest improvements in the business process.
- To understand the role, responsibility and authority and delegation of managerial.
- To provide an insight into the recent trends in business.

B. Topics

1. Human Resource Management
2. Business Communication and Correspondence
3. Business Size and Finance

HISTORY (Modern India and World History)

INDIAN HISTORY

1. Towards Independence and Partition
2. Establishment and Development of Indian Democracy
3. Challenges to Indian Democracy

WORLD HISTORY

1. World War II
2. De-colonization in Africa(Ghana & Kenya)
3. Cold War – origin, course, end & impact

GEOGRAPHY

A. Aims and Objectives:

- To enable candidates to acquire knowledge and to develop an understanding of facts, terms, symbols, concepts, principles, generalizations, hypotheses, problems, trends, processes and methods of Geography at the national and global level.
- To apply the knowledge of the principles of Physical Geography in explaining the causes and consequences of natural hazards and suggest ways of coping with them through sustainable development.
- To develop skills of drawing statistical diagrams and thematic maps.
- To develop an interest in Geography.

B. Topics

1. Locational setting of India
2. Evolution and structure
3. Relief
4. Drainage
5. Climate
6. Natural vegetation
7. Population
8. Migration trends
9. Demographic attributes
10. Rural settlements

SOCIOLOGY

A. Aims and Objectives:

- To familiarize candidates with the basic concepts of Sociology and Anthropology.
- To develop in candidates an understanding of various forces that constitutes social life and social problems.
- To create an awareness of the process of change and development in general and with reference to the Indian society in particular.
- To provide candidates with the means whereby they can come to a better understanding of other cultures as well as of their own.
- To form in candidates the habit of scrutinizing social assumptions and beliefs in the light of scientific evidence.
- To introduce a deeper study of the subject for the tertiary level.

B. TOPICS:

1. Social institutions
2. Religion and society

3. Political organisation
4. Economic organisation

HOME SCIENCE

Unit –I – Food Preparation

- Principles of cooking
- Preliminary treatments of food before cooking
- Culinary terms
- Effects of cooking on food components
- Methods of increasing nutritive value of food

Unit –II – Meal Planning for the family

- Objectives of meal planning
- Factors affecting food selection
- Meal planning for various age groups
- Eating disorders
- Special diets

Unit –III –Resource Management

- Savings and Investments
- Avenues and schemes for savings and investments offered by different financial institutions

Unit –IV –Consumer education

- Consumer Protection
- Consumer aids
- Problems faced by consumers

ART

A. Aims and Objectives

- To encourage creative expression and interest in the World of Art.
- To develop the power of aesthetic appreciation and artistic values through the study of Art.

B. Topics

1. Continue with the syllabus of Class XI (Revision)
 2. Drawing and/or Painting from Objects
 3. Drawing and/or Painting from Nature
 4. Phad Painting / Cartoon Drawing / Poster Making
 5. Tie and Dye / Block Printing / Paper Collage
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