SCIENCE (52)

BIOLOGY

SCIENCE Paper - 3

CLASS IX

*There will be one paper of **two hours** duration of 80 marks and Internal Assessment of Practical Work carrying 20 marks.*

*The paper will be divided into **two** sections, Section I (40 marks) and Section II (40 marks).*

***Section I (compulsory)** will contain short answer questions on the entire syllabus.*

***Section II** will contain **six** questions. Candidates will be required to answer any **four** of these **six** questions.*

1. Basic Biology

(i) The cell, a unit of life, protoplasm, basic difference between prokaryotic and eukaryotic cell; differences between an animal and a plant cell.

- *A basic understanding of the cell theory, structure of plant and animal cell with functions of various cell organelles. (Protoplasm, Cytoplasm, Cell Wall, Cell Membrane, Nucleus, Nucleolus, Mitochondria, Endoplasmic Reticulum, Ribosome, Golgi bodies, Plastids, Lysosomes, Centrosome and Vacuole).*
- *Major differences between a prokaryotic and eukaryotic cell.*
- *Differences between a plant cell and an animal cell should be mainly discussed with respect to cell wall, centrosome, vacuoles and plastids.*

(ii) Tissues: Types of plant and animal tissues.

- *A brief understanding of their location, basic structure and functions with examples.*
- *A brief understanding of their role in different physiological processes in plants and animals.*

2. Flowering Plants

(i) Flower: Structure of a bisexual flower, functions of various parts.

- *A brief introduction to complete and incomplete flowers.*
- *Essential and non-essential whorls of a bisexual flower; their various parts and functions.*
- *Inflorescence and placentation (meaning only)*

(Charts or actual specimens may be used to help enhance clarity of concepts.)

(ii) Pollination: self and cross-pollination.

- *Explanation, advantages and disadvantages of self and cross-pollination.*
- *Agents of pollination and the characteristic features of flowers pollinated by various agents such as insects, wind, and water.*
- *A brief idea as to how nature favours cross pollination.*

(iii) Fertilisation.

- *Events taking place between pollination and fertilisation leading to the formation of zygote in the embryo sac.*
- *A brief explanation of the terms double fertilization and triple fusion.*
- *Fruit and Seed - definition and significance.*

3. Plant Physiology

(i) Structure of dicot and monocot seeds, Germination of seeds, types, and conditions for seed germination.

- *Structure and germination of Bean seed and Maize grain.*

- *Differences between monocot and dicot seeds.*
- *Differences between hypogeal and epigeal germination.*
- *Conditions for seed germination - To be explained and supported by experiments.*

(ii) Respiration in plants: outline of the process, gaseous exchange.

- *A brief outline of the process mentioning the terms Glycolysis, Krebs cycle and their significance.*
- *A reference to be made to aerobic and anaerobic respiration with chemical equations in each case.*
- *Experiments on gaseous exchange and on heat production.*

4. Diversity in living organisms

(i) Economic importance of Bacteria.

(a) Useful role of bacteria:

- *Medicine: antibiotics, serums and vaccines*
- *Agriculture: nitrogen cycle (role of nitrogen fixing, nitrifying and denitrifying bacteria)*
- *Industry -curing of tea, tanning of leather.*

(b) Harmful role of bacteria - spoilage of food, diseases in plants and animals, bio-weapons.

(ii) Economic importance of Fungi.

A brief idea of the useful role of Fungi in breweries, bakeries, cheese processing, and mushroom cultivation. (Processes of manufacture are not required).

5. Human Anatomy and Physiology

(a) Nutrition.

(i) Classes of food; balanced diet. Malnutrition and deficiency diseases.

- *Functions of carbohydrates, fats, proteins, mineral salts (calcium, iodine, iron and sodium), vitamins and water in proper functioning of the body.*
- *Sources of vitamins, their functions and deficiency diseases.*
- *Meaning and importance of a 'Balanced Diet'.*
- *Role of cellulose in our diet.*
- *Causes, symptoms and prevention of Kwashiorkor and Marasmus.*

(ii) The structure of a tooth, different types of teeth.

- *Structure of a tooth to be discussed with the help of a diagram.*
- *Functions of different types of teeth.*
- *Dental formula of an adult.*

(iii) Digestive System: Organs, digestive glands and their functions (including enzymes and their functions in digestion, absorption and assimilation of digested food).

- *Organs and glands of the digestive system and their functions with reference to digestion, absorption and assimilation.*
- *brief idea of peristalsis.*

(b) Skeleton - Movement and Locomotion.

- Functions of human skeleton
- Axial and Appendicular Skeleton
- Types of joints with reference to their location*:*
  - *immovable joints*
  - *slightly movable joints*
  - *freely movable (hinge joint, ball and socket joint, gliding joint, pivot joint*.)

(c) Structure and functions of skin.

- *Various parts of the skin and their functions.*
- *Special derivatives of the skin with reference to sweat glands, sebaceous glands, hair, nails and mammary glands.*
- *Heat regulation - vasodilation and vasoconstriction.*

(d) Respiratory System: Organs; mechanism of breathing; tissue respiration, heat production.

- *Structures of the respiratory system.*
- *Differences between anaerobic respiration in plants and in man.*
- *Role of diaphragm and intercostal muscles in breathing to provide a clear idea of the breathing process.*
- *Brief idea of gaseous transport and tissue respiration.*
- *Brief understanding of respiratory volumes.*
- *Effect of altitude on breathing; asphyxiation and hypoxia.*

INTERNAL ASSESSMENT OF PRACTICAL WORK

The practical work is designed to test the ability of the candidates to make accurate observations from specimens of plants and animals.

PLANT LIFE

(i) The examination of an onion peel under the microscope to study various parts of the cell.

(ii) A cross-pollinated flower to be examined and identified and the parts to be studied and labelled e.g. Hibiscus.

(iii) Specimens of germinating seeds with plumule and radicle (the bean seed and maize grain) for examination, identification, drawing and labelling the parts.

ANIMAL LIFE

(i) The examination of a human cheek cell under the microscope to study various parts of the cell.

(ii) Identification of sugar, starch, protein and fat. through conduct of relevant tests.

(iii) Examination and identification of specimens belonging to the following groups of animals:

Non-Chordata - Porifera, Coelenterata, Platyhelminthes, Nemathelminthes Annelida, Arthropoda. Mollusca and Echinodermata.

Chordata- Pisces, Amphibia, Reptilia, Aves, Mammalia.

Identification of the structure of the following organs through specimens/models and charts: Lung and skin.

(iv) Experiments to show the mechanism of breathing.

Bell jar experiment should be discussed. Comparison should be made with the human lungs and respiratory tract to show the mechanism of breathing.

(v) Visit a few establishments in the locality such as motor repair workshops, kilns, pottery making units, fish and vegetable markets, restaurants, dyeing units. Find out the types of wastes and methods prevalent for their disposal. On the basis of the information collected prepare a report, suggest measures to improve the environmental conditions.

(vi) Visit a water treatment plant, sewage treatment plant or garbage dumping or vermicomposting sites in the locality and study their working.

SCIENCE (52)

CHEMISTRY

SCIENCE Paper - 2

CLASS IX

*There will be one paper of **two hours** duration of 80 marks and Internal Assessment of practical work carrying 20 marks.*

*The paper will be divided into **two** sections, Section I (40 marks) and Section II (40 marks).*

***Section I** (**compulsory**) will contain short answer questions on the entire syllabus.*

***Section II** will contain **six** questions. Candidates will be required to answer any **four** of these **six** questions.*

***Note:** All chemical reactions should be studied with reference to the reactants, products, conditions, observations and the (balanced) equations.*

1. The Language of Chemistry

(i) Symbol of an element; valency; formulae of radicals and formulae of compounds. Balancing of simple chemical equations.

- *Symbol – definition; symbols of the elements used often.*
- *Valency - definition; hydrogen combination and number of valence electrons of the metals and non-metals; mono, di, tri and tetra valent elements.*
- *Radicals – definition; formulae and valencies.*
- *Compounds – name and formulae.*
- *Chemical equation – definition and examples of chemical equations with one reactant and two or three products, two reactants and one product, two reactants and two products and two reactants and three or four products; balancing of equations. (by hit and trial method).*

(ii) Relative Atomic Masses (atomic weights) and Relative Molecular Masses (molecular weights): either - standard H atom or $1/12^{th}$ of carbon 12 atom.

- *Definitions*
- *Calculation of Relative Molecular Mass and percentage composition of a compound.*

2. Chemical changes and reactions

(i) Types of chemical changes.

- *Direct combination*
- *Decomposition*
- *Displacement;*
- *Double decomposition*

(The above to be taught with suitable chemical equations as examples).

(ii) Energy changes in a chemical change.

Exothermic and endothermic reactions with examples – evolution/absorption of heat, light and electricity.

3. Water

(i) Water as a universal solvent.

- *Solutions as 'mixtures' of solids in water; saturated solutions.*
- *Qualitative effect of temperature on solubility (e.g. solutions of calcium sulphate, potassium nitrate and sodium chloride in water).*

(ii) Hydrated and anhydrous substances.

(a) Hydrated substances:

Water of Crystallisation – meaning and examples.

(b) Anhydrous substances:

Meaning and examples only

(c) Properties:

- *Efflorescence*
- *Deliquescence*
- *Hygroscopy*

(Definition and examples of each of the above).

(iii) Drying and Dehydrating Agents

Meaning and examples only.

4. Atomic Structure and Chemical bonding

(i) Structure of an Atom, mass number and atomic number, Isotopes and Octet Rule.

- *Definition of an atom*
- *Constituents of an atom - nucleus (protons, neutrons) with associated electrons; mass number, atomic number.*
- *Electron distribution in the orbits - $2n^2$ rule, Octet rule. Reason for chemical activity of an atom.*
- *Definition and examples of isotopes (hydrogen, carbon, chlorine).*

(ii) Electrovalent and covalent bonding, structures of various compounds – orbit structure

(a) Electrovalent Bond

- *Definition*
- *Atomic orbit structure for the formation of Electrovalent compounds (e.g. NaCl, $MgCl_2$, CaO);*

(b) Covalent Bond

- *Definition*
- *Atomic orbit structure for the formation of Covalent molecules on the basis of duplet and octet of electrons (examples: hydrogen, chlorine, oxygen, nitrogen, hydrogen chloride, water, ammonia, carbon tetrachloride, methane.)*

5. The Periodic Table

Dobereiner's Triads, Newland's law of Octaves, Mendeleev's contributions; Modern Periodic Law, the Modern Periodic Table. (Groups and periods)

- *General idea of Dobereiner's triads, Newland's law of Octaves, Mendeleev's periodic law.*
- *Discovery of Atomic Number and its use as a basis for Modern Periodic law.*
- *Modern Periodic Table (Groups 1 to 18 and periods 1 to 7).*
- *Special reference to Alkali metals (Group 1), Alkaline Earth metals (Group 2) Halogens (Group 17) and Zero Group (Group 18).*

6. Study of the First Element -Hydrogen

Position of the non-metal (Hydrogen) in the periodic table and general group characteristics with reference to valency electrons, burning, ion formation applied to the above-mentioned element.

(i) Hydrogen from: water, dilute acids and alkalis.

(a) Hydrogen from water:

- *The action of cold water on sodium potassium and calcium.*
- *The action of hot water on magnesium.*
- *The action of steam on aluminium, zinc, and iron; (reversibility of reaction between iron and steam).*
- *The action of steam on non-metal (carbon).*

Students can be shown the action of sodium and calcium on water in the laboratory. They must be asked to make observations and write equations for the above reactions.

Application of activity series for the above-mentioned reactions.

(b) Displacement of hydrogen from dilute acids.

The action of dilute sulphuric acid or hydrochloric acid on metals: Mg, Al, Zn and Fe .

(To understand reasons for not using other metals and dilute nitric acid.)

(c) Displacement of hydrogen from alkalis.

The action of Alkalis ((NaOH, KOH) on Al, Zn and Pb – unique nature of these elements.

(ii) The preparation and collection of hydrogen by a standard laboratory method other than electrolysis.

In the laboratory preparation, the reason for using zinc, the impurities in the gas, their removal and the precautions in the collection of the gas must be mentioned.

(iii) Industrial manufacture of hydrogen by Bosch process.

- *Main reactions and conditions.*
- *Separation of CO_2 and CO from hydrogen.*

(iv) Oxidation and reduction reactions.

Differences in terms of addition and removal of oxygen / hydrogen.

7. Study of Gas Laws

(i) The behaviour of gases under changes of temperature and pressure; explanation in terms of molecular motion (particles, atoms, molecules); Boyle's Law and Charles' Law; absolute zero; gas equation; simple relevant calculations.

- *The behaviour of gases under changes of temperature and pressure; explanation in terms of molecular motion (particles, atoms, molecules).*
- *Boyle's Law: statement, mathematical form, simple calculations.*
- *Charles' Law: statement, mathematical form, simple calculations.*
- *Absolute zero Kelvin scale of temperature.*
- *Gas equation $P_1 V_1 / T_1 = P_2 V_2 / T_2$; simple relevant calculations based on gas equation.*

(ii) Relationship between Kelvin scale and Celsius Scale of temperature; Standard temperature and pressure.
Conversion of temperature from Celsius Scale to Kelvin scale and vice versa. Standard temperature and pressure. (Simple calculations).

INTERNAL ASSESSMENT OF PRACTICAL WORK

Candidates will be asked to observe the effect of reagents and/or of heat on substances supplied to them. The exercises will be simple and may include the recognition and identification of certain gases listed below.

Gases: Hydrogen, Oxygen, Carbon dioxide, Chlorine, Hydrogen chloride, Sulphur dioxide, Hydrogen sulphide, Ammonia, Water vapour, Nitrogen dioxide.

Candidates are expected to have completed the following minimum practical work.

Simple experiments on:

1. Action of heat on the following compounds:
   (a) copper carbonate, zinc carbonate
   (b) washing soda, copper sulphate crystals
   (c) zinc nitrate, copper nitrate, lead nitrate
   (d) ammonium chloride, iodine, ammonium dichromate

   Make observations, identify the products and make deductions where possible.
2. Action of dilute sulphuric acid on the following substances. (warm if necessary)
   (a) a metal
   (b) a carbonate
   (c) a sulphide
   (d) a sulphite

   Make observations, identify the gas evolved and make deductions.
3. Apply the flame test to identify the metal in the unknown substance.
   (a) a sodium salt
   (b) a potassium salt
   (c) a calcium compound

COMPUTER APPLICATIONS (86)

CLASS IX

*There will be **one** written paper of **two hours** duration carrying 100 marks and Internal Assessment of 100 marks.*

The paper will be divided into two sections A and B.

***Section A** (**Compulsory** – 40 marks) will consist of compulsory short answer questions covering the entire syllabus.*

***Section B** (60 marks) will consist of questions which will require detailed answers. There will be a choice of questions in this section.*

THEORY – 100 Marks

1. Introduction to Object Oriented Programming concepts

(i) Principles of Object Oriented Programming, (Difference between Procedure Oriented and Object oriented).
All the four principles of Object Oriented Programming should be defined and explained using real life examples (Data abstraction, Inheritance, Polymorphism, Encapsulation).

(ii) Introduction to JAVA - Types of java programs – Applets and Applications, Java Compilation process, Java Source code, Byte code, Object code, Java Virtual Machine (JVM), Features of JAVA.

Definition of Java applets and Java applications with examples, steps involved in compilation process, definitions of source code, byte code, object code, JVM, features of JAVA - Simple, Robust, secured, object oriented, platform independent, etc.

2. Elementary Concept of Objects and Classes

Modelling entities and their behaviour by objects, a class as a specification for objects and as an object factory, computation as message passing/method calls between objects (many examples should be done to illustrate this). Objects encapsulate state (attributes) and have behaviour (methods). Class as a user defined data type.

A class may be regarded as a blueprint to create objects. It may be viewed as a factory that produces similar objects. A class may also be considered as a new data type created by the user, that has its own functionality.

3. Values and data types

Character set, ASCII code, Unicode, Escape sequences, Tokens, Constants and Variables, Data types, type conversions.

Escape sequences [\n, \t, \\, \", \'], Tokens and its types [keywords, identifiers, literals, punctuators, operators], primitive types and non-primitive types with examples, Introduce the primitive types with size in bits and bytes, Implicit type conversion and Explicit type conversion.

4. Operators in Java

Forms of operators, Types of operators, Counters, Accumulators, Hierarchy of operators, 'new' operator, dot (.) operator.

Forms of operators (Unary, Binary, Ternary), types of operators (Arithmetic, Relational, Logical, Assignment, Increment, Decrement, Short hand operators), Discuss precedence and associativity of operators, prefix and postfix, Creation of dynamic memory by using new operator, invoking members of class using dot operator, Introduce System.out.println() and System.out.print() – for simple output.

(Bitwise and shift operators are not included).

5. Input in Java

Initialization, Parameter, introduction to packages, Input streams (Scanner Class), types of errors, types of comments

Initialization – Data before execution, Parameters – at the time of execution, input stream – data entry during execution – using methods of Scanner class [nextShort(), nextInt( ), nextLong( ), nextFloat ( ), nextDouble( ), next( ), nextLine( ), next ( ) .charAt(0)]

Discuss different types of errors occurring during execution and compilation of the program (syntax errors, runtime errors and logical errors).Single line comment (//) and multiline comment (/ … */)*

6. Mathematical Library Methods

Introduction to package java.lang [default], methods of Math class.

pow(x,y), sqrt(x), cbrt(x), ceil(x), floor(x), round (x), abs(a), max(a, b), min(a,b), random( ).

Java expressions – using all the operators and methods of Math class.

7. Conditional constructs in Java

Application of if, if else, if else if ladder, switch-case, default, break.

if, if else, if else if, Nested if, switch case, break statement, fall through condition in switch case, Menu driven programs, System.exit(0) - to terminate the program.

8. Iterative constructs in Java

Definition, Types of looping statements, entry controlled loops [for, while], variations in looping statements, and Jump statements.

Syntax of entry controlled loops, break and continue, simple programs illustrating for & while loops, inter conversion between for – while, finite and infinite, delay, multiple counter variables (initializations and updations). Demonstrate break and continue statements with the help of loops.

Loops are fundamental to computation and their need should be shown by examples.

INTERNAL ASSESSMENT - 100 Marks

This segment of the syllabus is totally practical oriented. The accent is on acquiring basic programming skills quickly and efficiently.

Programming Assignments (Class IX)

Students are expected to do a minimum of 15 assignments during the whole year to reinforce the concepts studied in the class.

Suggested list of Assignments:

The laboratory assignments will form the bulk of the course. Good assignments should have problems which require design, implementation and testing. They should also embody one or more concepts that have been discussed in the theory class. A significant proportion of the time has to be spent in the laboratory. Computing can only be learnt by doing.

The teacher-in-charge should maintain a record of all the assignments done as a part of practical work throughout the year and give it due credit at the time of cumulative evaluation at the end of the year.

Some sample problems are given below as examples. The problems are of varying levels of difficulty:

(i) Programs using Assignment statements.
Example: Calculation of Area / Volume / Conversion of temperature / Swapping of values etc.

(ii) Programs based on– Input through parameters.
Example: Implementation of standard formula etc.

(iii) Programs based on – Input through Scanner class.
Example: Implementation of standard formula etc.

(iv) Programs based on Mathematical methods.
Example: larger/smaller of two numbers, cube root, square root, absolute value, power, etc.

(v) Programs based on if, if else, if else if ladder, nested if etc.

(a) if programs
- Larger / smaller of two numbers
- To check divisibility of a number, etc.

(b) if - else programs
- Odd or even number
- Eligibility to vote
- Upper case or lower case

- Positive or negative number
- Vowel or Consonant
- Buzz number etc.

(c) if-else-if programs

- Programs based on discount/interest/ bonus/ taxes/ commission.
- Programs based on slab system.
- Programs based on Nested if.

(vi) Programs on switch case.

(a) Day of a week
(b) Name of the month
(c) Names of the seasons
(d) Calculator
(e) Vowel or consonant etc.

(vii) Programs based on Looping Statement

(a) Programs based on for looping statement.

(b) Programs based on printing simple series, summation of simple series, product of simple series.

(c) Prime number, perfect number, composite number, Fibonacci series. Lowest Common Multiple (LCM), Highest Common Factor (HCF) etc.

(d) To find the biggest and smallest number from *n* number of entered numbers.

(e) Program based on while loop like Armstrong number, Spy number, Niven number, Palindrome number, etc.

(viii) Menu Driven programs.

Important: This list is indicative only. Teachers and students should use their imagination to create innovative and original assignments.

EVALUATION

Proposed Guidelines for Marking

The teacher should use the criteria below to judge the internal work done. Basically, four criteria are being suggested: class design, coding and documentation, variable description and execution or output. The actual grading will be done by the teacher based on his/her judgment. However, one possible way: divide the outcome for each criterion into one of 4 groups: excellent, good, fair/acceptable, poor/unacceptable, then use numeric values for each grade and add to get the total.

Class design:

Has a suitable class (or classes) been used?
Are all attributes with the right kinds of types present?
Is encapsulation properly done?
Is the interface properly designed?

Coding and Documentation:

Is the coding done properly? (choice of names, no unconditional jumps, proper organization of conditions, proper choice of loops, error handling code layout). Is the documentation complete and readable? (class documentation, variable documentation, method documentation, constraints, known bugs – if any).

Variable and Description

Format for variable description:

Name of the variable	Data Type	Purpose/Description

Evaluation of practical work (Assignments) will be done as follows:

Subject Teacher (Internal Examiner): 100 Marks

Criteria (Total-100 marks)	Class design (20 marks)	Variable description (20 marks)	Coding and Documentation (20 marks)	Execution OR Output (40 marks)
Excellent	20	20	20	40
Good	16	16	16	32
Fair	12	12	12	24
Poor	8	8	8	16

ENGLISH (01)

CLASS IX

*There will be **two** papers:*

Paper 1: English Language;

Paper 2: Literature in English.

*Each of these papers will be of **two hours** duration*.

Paper 1:	English Language	(80 Marks)
	Internal Assessment	*(20 Marks)*
Paper 2:	Literature in English	(80 Marks)
	Internal Assessment	*(20 Marks)*

PAPER 1 - ENGLISH LANGUAGE

(Two hours) - 80 Marks

Five questions will be set, all of which will be compulsory.

Question 1: Candidates will be required to write a composition of about **300– 350** words from a choice of subjects which will test their ability to: Organise, describe, narrate, report, explain or present ideas coherently with accuracy and precision, compare and contrast ideas and arrive at conclusions and use correct style and format.

The subjects will be varied and may be suggested by language or by other stimuli such as pictures. The subjects will be so chosen so as to allow the candidates to draw on first-hand experience or to stimulate their imagination.

With one subject, a number of suggestions about the content of the composition will be given, but the use of the suggestions will be optional and a candidate will be free to treat the subject in any way that he/she chooses.

The organisation of subject matter, syntax, punctuation, correctness of grammatical constructions and spelling will be expected to be appropriate to the mode of treatment required by the subject.

Question 2: Candidates will have to write a letter from a choice of two subjects requiring either a formal or an informal mode of treatment. Suggestions regarding the content of the letter may be given. The layout of the letter with address, introduction, conclusion, etc., will form part of the assessment. Special attention must be paid to the format of the letter with emphasis on vocabulary appropriate to the context.

Question 3: Candidates will be given a specific situation and will be required to:

(a) Write the text for a notice based on given directions.

(b) Write an e-mail on the same content as the notice.

Question 4: An unseen prose passage of about **450** words will be given. Uncommon items of vocabulary, or structure will be avoided. One question will be set to test vocabulary. Candidates will be required to show an understanding of the words/phrases in the context in which they have been used.

A number of questions requiring short answers will also be asked on the passage. These questions will test the candidates' ability to comprehend the explicit content and organisation of the passage and to infer information, intention and attitude from it.

The last question will consist of a summary that will test the candidates' ability to distinguish main ideas from supporting details and to extract salient points to re-write them in the form of a summary. Candidates will be given clear indications of what they are to summarise and of the length of the summary.

Question 5: There will be a number of short answer questions to test the candidates' knowledge of **functional** grammar, structure and use of the language.

All the items in this question will be compulsory. They will consist of correct use of prepositions, verbs and transformation of sentences.

PAPER 2 - LITERATURE IN ENGLISH

(Two hours) - 80 Marks

Candidates will be required to answer five questions from the prescribed textbooks, which include Drama, Prose (Short Stories) and Poetry.

Drama and Prose (Short Stories)

Questions set will be central to the text. Candidates will be required to show that they have understood the passage and are able to clearly give their interpretation of the questions set, which should be in their own words and relevant to the text.

Excerpts may be given from the drama and prose texts leading to questions on the specific book.

Poetry

A poem, or passages from poems, will be given and questions will be set to test the candidates' response to the poem. The questions will focus on the content, understanding and the personal response of candidates to the poem as a whole.

NOTE: ***The Class IX examination will be conducted on the portion of this syllabus that is to be covered during the academic year.***

Syllabus to be covered in Class IX

1. **THE MERCHANT OF VENICE** (Shakespeare's **unabridged** play by *A.W. Verity*)
   Drama: ***Act 1*** *– Scenes 1, 2 & 3,* ***Act 2*** *– Scenes 1 to 9,* ***Act 3*** *– Scene 1 ONLY.*

TREASURE TROVE - *A collection of ICSE Poems and Short Stories* (Evergreen Publications)

2. **POETRY:**
   (i) *The Cold Within*–James Patrick Kinney
   (ii) *The Bangle Sellers* – Sarojini Naidu
   (iii) *After Blenheim* – Robert Southey
   (iv) *Television* – Roald Dahl
   (v) *Daffodils* – William Wordsworth

3. **PROSE (Short Stories):**
   (i) *Old Man at the Bridge* – Ernest Miller Hemingway
   (ii) *A Horse and Two Goats* – R.K. Narayan
   (iii) *Hearts and Hands* – O. Henry
   (iv) *A Face in the Dark* – Ruskin Bond
   (v) *An Angel in Disguise* – T.S. Arthur

**** Please note that the Class X - ICSE Examination paper will be set on the entire syllabus prescribed for the subject.***

Note: *For list of prescribed text-books see Appendix- I.*

INTERNAL ASSESSMENT

Paper 1 - English Language

1. Schools will prepare, conduct and record assessments of the **Listening and Speaking Skills** of candidates as follows:

Three assessments are to be done in the course of the year.

2. Pattern of Assessment

a) Listening Skills

A passage of about 300 words is read aloud by the examiner *twice*, the first time at normal reading speed (about 110 words a minute) and the next time at a slower speed. Candidates may make brief notes during the readings. They then answer an objective type test based on the passage, on the paper provided.

The recommended number of candidates at a sitting is 30.

b) Speaking Skills

Each candidate is required to make an oral presentation for about two minutes, which will be followed by a discussion on the subject with the examiners, for about three minutes.

Subjects for presentation may include narrating an experience, providing a description, giving directions how to make or operate something, expressing an opinion, giving a report, relating an anecdote or commenting on a current event.

A candidate may refer to brief notes in the course of the presentation but reading or excessive dependence on notes will be penalized.

It is recommended that candidates be given an hour for preparation of their subject for presentation and that they be given a choice of subject, on a common paper.

EVALUATION

The assessment will be conducted by the subject teacher.

Award of Marks	**(20 Marks)**
Listening Skills:	10 marks
Speaking Skills:	10 marks

Schools are required to maintain a record of all assessments conducted in **Listening and Speaking Skills.** These include copies of the assessment tests,

topics for presentation and marks awarded. The record will be maintained for a period of 2 months after the ICSE (10) examinations of the candidates concerned.

Paper 2 - Literature in English

Schools will set, assess and record written assignments by the candidates as given below:

Two or three assignments of approximately 300 to 400 words each.

SUGGESTED ASSIGNMENTS

Assignments should be based on the prescribed textbooks on the following lines:

(i) Character/thematic analysis;

(ii) Socio-economic, cultural, historical relevance / background;

(iii) Summary / paraphrase.

(iv) Appreciation of literary qualities.

(v) Identifying with a character. Putting oneself in the place of a character in given circumstances and explaining one's actions.

(vi) Imagine alternative outcomes or endings in a literary piece and the effect on all concerned.

EVALUATION

The assignments/projects are to be evaluated by the subject teacher.

INTERNAL ASSESSMENT IN ENGLISH LANGUAGE-GUIDELINES FOR MARKING WITH GRADES - AURAL ASSIGNMENT (CLASSES IX & X)

Grade	Understanding/ Comprehension Main Idea, Central Theme	Recall	Vocabulary	Context/ Correlation to Other Areas	Marks
I	The candidate accurately understands the central idea of the passage as well as the relevant points in the selected passage/ talk.	The candidate recalls all the important points made (written/ verbal).	The candidate uses appropriate and correct vocabulary while recalling the points made.	The candidate clearly understands the context and can widely correlate the passage to the other areas.	3
II	The candidate gives ideas fairly close to the central / main idea of the passage as well as understands some of the relevant points heard in the selected passage/ talk.	The candidate recalls some of the important points made (written/ verbal).	The candidate uses correct but simple vocabulary while recalling the points made.	The candidate can moderately understand the context of the passage and can moderately correlate the passage to the other areas.	2
III	The candidate cannot fully comprehend the passage and gives only a few ideas related to the central theme of the passage.	The candidate recalls very few of the important points made (written/verbal).	The candidate makes various errors in vocabulary while recalling the points made.	The candidate can only faintly understand the context of the passage and relate it to the other areas.	1
IV	The candidate is neither able to understand the central/main idea of the passage; nor able to understand relevant points heard in the passage/talk.	The candidate is unable to recall the important points made (written/verbal)	The candidate uses incorrect vocabulary while recalling the points made.	The candidate is unable to understand the context of the passage and is unable to correlate the passage to the other areas.	0

INTERNAL ASSESSMENT IN ENGLISH LANGUAGE - GUIDELINES FOR MARKING WITH GRADES - ORAL ASSIGNMENT (CLASSES IX & X)

Grade	Fluency of Language	Subject Matter	Organization	Vocabulary/ Delivery	Understanding	Gesture	Marks
I	Speaks with fluency and has full operational command over the language.	Matter is relevant, rich in content and original.	Content is well sequenced and well organized.	Uses appropriate vocabulary and pronounces words correctly.	While speaking, the candidate emphasizes the important points.	Uses natural and spontaneous gestures that are not out of place.	3
II	The candidate speaks with fairly good fluency and has reasonable operational command of the language.	The subject matter is mostly relevant, consisting of a few original ideas.	The content is satisfactorily sequenced and well organized.	The candidate pronounces most words correctly and uses simple vocabulary.	While speaking, the candidate emphasizes most important points.	Uses some natural gestures.	2
III	The candidate speaks with poor fluency and does not communicate except for the most basic information.	The subject matter is irrelevant and lacks originality.	The subject content is very poor and lacks organisational structure.	The candidate pronounces many words incorrectly and uses inappropriate vocabulary.	While speaking, the candidate emphasizes some important points.	Uses very few natural gestures.	1
IV	The candidate cannot communicate even the most basic information.	The subject matter is negligible.	The subject content comprises of mere words with no structured sentences.	The candidate is unable to correctly pronounce most words and has a limited vocabulary.	While speaking, the candidate is unable to emphasize important points.	Uses no natural gestures.	0

INTERNAL ASSESSMENT IN LITERATURE IN ENGLISH -GUIDELINES FOR MARKING WITH GRADES (CLASSES IX & X)

Grade	Understanding of Text (Narrative)	Examples from Text	Understanding of text- Interpretation and Evaluation	Appreciation of Language, Characterization	Critical Appreciation - Personal Response	Marks
I	The candidate demonstrates expertise in giving an appropriate account of the text, with well-chosen reference to narrative and situation.	The account is suitably supported by relevant examples from the text.	The candidate understands the text with due emphasis on interpretation and evaluation.	The candidate appreciates and evaluates significant ways (structure, character, imagery) in which writers have achieved their effects.	The candidate is able to effectively reflect personal response (critical appreciation) to the text.	4
II	The candidate demonstrates a high level of competence in giving an account of the text, with appropriate references to the narrative and situation.	The account is supported by examples from the text.	The candidate understands text with some emphasis on interpretation and evaluation.	The candidate appreciates and evaluates significant ways in which writers have achieved their effects.	The candidate is able to reflect a personal response to the text.	3
III	The candidate demonstrates competence in giving an account of the text with some reference to the narrative and situation.	The candidate understands the text and shows a basic recognition of the theme and can support it by a few examples.	The candidate recognizes some aspects of the text used by authors to present ideas.	The candidate recognizes some of the significant ways in which the writers have used the language.	The candidate is able to communicate a personal response, which shows appreciation.	2
IV	The candidate gives a broad account of the text with reference to the narrative and situation.	The candidate understands the basic meaning of the text.	The candidate relates the text to other texts studied.	The candidate recognizes differences in the way authors write.	The candidate communicates a straightforward personal response to the text.	1
V	The candidate is unable to demonstrate an understanding of the basic events in the text.	The candidate is unable to understand the text or support it with any examples.	The candidate is unable to relate the text to the other texts studied.	The candidate is unable to recognize the differences in the way authors write.	The candidate is unable to give a personal view of the text studied.	0

HISTORY, CIVICS AND GEOGRAPHY (50)

GEOGRAPHY

H.C.G. - Paper - 2

Candidates offering History, Civics and Geography (Thailand) are not eligible to offer History, Civics and Geography.

CLASS IX

*There will be **one** paper of **two hours** duration carrying 80 marks and an Internal Assessment of 20 marks.*

The question paper will consist of Part I and Part II.

***Part I (compulsory)** will consist of **two** questions. Question 1 will consist of short answer questions from the entire syllabus and Question 2 will consist of a question based on **World Map**.*

***Part II**. Candidates will be required to choose **any five** questions.*

Candidates will be expected to make the fullest use of sketches, diagrams, graphs and charts in their answers.

Questions may require answers involving the interpretation of photographs of geographical interest.

PRINCIPLES OF GEOGRAPHY

1. Our World

(i) Geographic grid - Latitudes & Longitudes

(a) *Concept of latitudes: main latitudes, their location with degrees, parallels of latitude and their uses.*

(b) *Concept of longitudes - Prime Meridian, time (local, standard and time zones, Greenwich Mean Time (GMT) and International Date Line (IDL). Eastern and Western hemisphere.*

(ii) Rotation and Revolution

Rotation – direction, speed and its effects (occurrence of day and night, the sun rising in the east and setting in the west, Coriolis effect)

Revolution of the earth and its inclined axis – effects: the variation in the length of the day and night and seasonal changes with Equinoxes and Solstices.

2. Structure of the Earth

(i) Earth's Structure

Core, mantle, crust – meaning, extent and their composition.

(ii) Rocks - difference between minerals and rocks, types of rocks: igneous, sedimentary, metamorphic, their characteristics and formation.

(iii) Volcanoes

Meaning, Types – active, dormant and extinct.
Effects – constructive and destructive.
Important volcanic zones of the world.

(iv) Earthquakes

Meaning, causes and measurement.
Effects: destructive and constructive.
Earthquake zones of the World

(v) Weathering

Meaning, types and effects of weathering.
Types: Physical Weathering – block and granular disintegration, exfoliation;
Chemical weathering - oxidation, carbonation, hydration and solution;
Biological Weathering – caused by humans, plants and animals.

3. Hydrosphere

Meaning of hydrosphere.
Tides - formation and pattern.
Ocean Currents – their effects (specifically of Gulf Stream, North Atlantic Drift, Labrador Current, Kuro Shio and Oya Shio.)

4. Atmosphere

(i) Composition and structure of the atmosphere. *Troposphere, Stratosphere, Ionosphere and Exosphere; Ozone in the Stratosphere, its depletion. Global warming and its impact.*

(ii) Insolation

- *Meaning of insolation and terrestrial radiation.*
- *Factors affecting temperature: latitude, altitude, distance from the sea, slope of land, winds and ocean currents.*

(iii) Atmospheric Pressure and Winds.

- *Meaning and factors that affect atmospheric pressure.*
- *Major pressure belts of the world.*
- *Factors affecting direction and velocity of wind – pressure gradient, Coriolis Effect.*
- *Permanent winds – Trades, Westerlies and Polar Easterlies.*
- *Periodic winds - Land and Sea breezes, Monsoons.*
- *Local winds - Loo, Chinook, Foehn and Mistral.*
- *Variable winds - Cyclones and Anticyclones.*

(iv) Humidity

- *Humidity – meaning.*
- *Precipitation - forms (rain, snow, and hail).*
- *Types of rainfall – relief/orographic, convectional, cyclonic/ frontal with examples from the different parts of the world.*

5. Pollution

(a) Types - air, water (fresh and marine), soil, radiation and noise.

(b) Sources:

- *Noise: Traffic, factories, construction sites, loudspeakers, airports.*
- *Air: vehicular, industrial, burning of garbage.*
  Water: domestic and industrial waste.
- *Soil: chemical fertilizers, bio medical waste and pesticides.*
- *Radiation: X- rays; radioactive fallout from nuclear plants.*

(c) Effects - on the environment and human health.

(d) Preventive Measures
Carpools, promotion of public transport, no smoking zone, restricted use of fossil fuels, saving energy and encouragement of organic farming.

6. Natural Regions of the World

Location, area, climate, natural vegetation and human adaptation.
Equatorial region, Tropical Deserts, Tropical Monsoon.

7. Map Work

On an outline map of the World, candidates will be required to locate, mark and name the following:

1. *The major **Natural Regions** of the world - Equatorial, Tropical Monsoon, Tropical Deserts.*
2. *The Oceans, Seas, Gulfs and Straits - all Major Oceans, Caribbean Sea, North Sea, Black Sea, Caspian Sea, South China Sea, Mediterranean Sea, Gulf of Carpentaria, Hudson Bay, Persian Gulf, Gulf of Mexico, Gulf of Guinea, Bering Strait, Strait of Gibraltar, Strait of Malacca.*
3. *Rivers – Mississippi, Colorado, Amazon, Paraguay, Nile, Zaire, Niger, Zambezi, Orange, Rhine, Volga, Danube, Murray, Darling, Hwang Ho, Yangtse Kiang, Ob, Indus, Ganga, Mekong, Irrawaddy, Tigris, Euphrates.*
4. *Mountains – Rockies, Andes, Appalachian, Alps, Himalayas, Pyrenees, Scandinavian Highlands, Caucasus, Atlas, Drakensburg, Khinghan, Zagros, Urals, Great Dividing Range.*

5. *Plateaus – Canadian Shield, Tibetan Plateau, Brazilian Highlands, Patagonian Plateau, Iranian Plateau, Mongolian Plateau.*

INTERNAL ASSESSMENT

PRACTICAL WORK/ PROJECT WORK

1. A record file having any **three** of the following exercises will be maintained. (The file will be evaluated out of 10 marks).
   (a) Uses of important types of maps.
   (b) Directions and how to identify them - an illustrative diagram.
   (c) Reading and using statement of scale, graphic scale and scale shown by representative fraction method. (No drawing work, only explaining their meanings).
   (d) Reading of one town guide map or an atlas map. (Recognising the symbols and colours used, identifying directions and distances).
   (e) Drawing and recognising forms of important contours viz. valleys, ridges, types of slopes, conical hill, plateau, escarpment and sea cliff.
   (f) Drawing at least one sketch map to organize information about visiting an important place, a zoo or a monument.
2. Candidates will be required to prepare a project report on any **one** topic. The topics for assignments may be selected from the list of suggested assignments given below. Candidates can also take up an assignment of their choice under any of the four broad areas given below. (The project will be evaluated out of 10 marks).

Suggested list of Assignments:

(a) **Weather records:** Maintaining and interpreting weather records as found in the newspaper for at least one season.

(b) **Collection of data from secondary sources: {**Using Modern techniques *i.e.*, Global Positioning System (GPS), Remote Sensing, Aerial Photography and Satellite imageries}**:** Preparing a Power Point presentation on current issues like – use of earth resources/ development activities/dangers of development and ecological disasters like droughts, earthquakes, volcanoes, floods, landslides cyclones and tornadoes in the world.

(c) **Physical Features:** Collection of data from primary and secondary sources or taking photographs and preparing notional sketches of features found in the vicinity or areas visited during the year as a part of school activity.

(d) Find out the sources of pollution of water bodies in the locality and determine the quality of water.

(e) Collect information on global environmental issues and problems and communicate your findings through appropriate modes (posters, charts, collages, cartoons, handouts, essays, street plays and PowerPoint presentation).

(f) **Area Studies:** Choosing any aspect from World Studies and preparing a Power Point presentation or a write up on it.

(g) **Meteorological Instruments and their uses:** Six's maximum and minimum thermometer, mercury barometer, aneroid barometer, wind vane, anemometer, rain gauge and hygrometer.

SECOND LANGUAGE

Aims:

1. To appreciate the language as an effective means of communication.
2. To acquire knowledge of the elements of the language.
3. To develop an interest in the language.
4. To understand the language when spoken at normal conversational speed.
5. To understand the basic structural patterns of the language, vocabulary and constructions.

INDIAN LANGUAGES

CLASSES IX AND X

Papers will be set in the following languages:

Ao-Naga, Assamese, Bengali, Dzongkha, Garo, Gujarati, Hindi, Kannada, Khasi, Lepcha, Malayalam, Manipuri, Marathi, Mizo, Nepali, Odia, Punjabi, Sanskrit, Tamil, Tangkhul, Telugu, Urdu or any other language of an Indian community approved by the Council.

*There will be one paper of **three** hours duration carrying 80 marks and Internal Assessment of 20 marks.*

The paper will be divided into two sections, Section A and Section B.

Section A: Language *(40 Marks)*

Section B: Prescribed Texts *(40 Marks)*

*Candidates will be required to attempt **all** questions from Section A. They must attempt **four** questions from Section B from* **ONLY** ***two*** *of the prescribed textbooks.*

SECTION A: LANGUAGE - 40 Marks

This section will consist of four questions, all of which will be compulsory.

1. **Composition**: Candidates will be required to write one composition, in the language, which may include short explanations, directions, descriptions or narratives. There will be a choice of subjects, which will be varied and may be suggested by language or other stimuli such as pictures and objects. (15 Marks)
2. **Letter**: Candidates will be required to write a letter from a choice of two subjects. Suggestions may be given. The layout of the letter with address, introduction, conclusion, etc., will form part of the assessment. (7 Marks)
3. **Comprehension**: An unseen passage of about 250 words will be given in the language. Questions on the passage will be set for answers in the language, designed to test the candidates' understanding of the content of the passage. (10 Marks)
4. **Grammar**: This will consist of tests in the use of language vocabulary, syntax and idioms, synthesis in sentence construction, formation of sentences in the language correctly embodying given words or forms. The question will not require any knowledge of grammatical terms. (8 Marks)

SECTION B: PRESCRIBED TEXTS - 40 Marks

The question paper will consist of structured and short answer questions. Candidates will be required to answer four questions from **ONLY two** of the prescribed text books. All questions will be set in the language and candidates will be required to answer in the language. The questions set will be designed to test the candidates' understanding of the subject matter of the prescribed books.

Note: For list of Prescribed Textbooks, see Appendix - I.

The Class X – ICSE examination paper will be set on the entire syllabus prescribed for the subject. The Class IX internal examination is to be conducted on the portion of this syllabus that is covered during the academic year**.** ***The Council has not prescribed bifurcation of the syllabus prescribed for this subject.***

INTERNAL ASSESSMENT

Language and Literature:

Class IX: Two or three assignments of reasonable length/duration of which two should be written assignments – one from the language and one from the literature component of the syllabus.

Class X: Two or three assignments of reasonable length/duration of which two should be written assignments – one from the language and one from the literature component of the syllabus.

SUGGESTED ASSIGNMENTS

Language:

Class IX: ***Creative Writing:*** Students are to write short compositions (approximately 300 to 400 words each), the stimuli being:

(i) a piece of recorded music;
(ii) a recorded series of sounds;
(iii) a picture/photograph;
(iv) an opening sentence or phrase;
(v) a newspaper/magazine clipping or report;

One piece of factual writing which should be informative or argumentative; one piece of expressive writing which is descriptive and imaginative; preparation of film/book review.

Aural: Listening to a conversation/talk/reading of a short passage and then writing down the relevant or main points in the specified number of words and answering the given questions.

Class X: ***Oral:*** Prepared speech/ declamation; impromptu speech/ debate/ discussion; report/interview; elocution; role-play/general conversation on selected topics.

Creative Writing: Students are to write short compositions (approximately 300 to 400 words each), the stimuli being:

(i) a piece of recorded music;
(ii) a recorded series of sounds;
(iii) a picture/photograph;
(iv) an opening sentence or phrase;
(v) a newspaper/magazine clipping or report;

One piece of factual writing which should be informative or argumentative; one piece of expressive writing which is descriptive and imaginative; preparation of film/book review.

Literature (Prescribed Texts):

Classes IX and X

Assignments should be based on the prescribed textbooks on the following lines:

(i) Character/thematic analysis.

(ii) Socio-economic, cultural, historical relevance / background.

(iii) Summary / paraphrase.

EVALUATION

The assignments/project work are to be evaluated by the subject teacher and by an External Examiner. (The External Examiner may be a teacher nominated by the Head of the school, who could be from the faculty, **but not teaching the subject in the section/class**. For example, a teacher of the language of Class VIII may be deputed to be an External Examiner for Class X projects in the language.)

The Internal Examiner and the External Examiner will assess the assignments independently.

Award of Marks	**(20 Marks)**
Subject Teacher (Internal Examiner)	10 marks
External Examiner	10 marks

The total marks obtained out of 20 are to be sent to the Council by the Head of the school.

The Head of the school will be responsible for the online entry of marks on the Council's CAREERS portal by the due date.

INTERNAL ASSESSMENT IN INDIAN LANGUAGES - GUIDELINES FOR MARKING WITH GRADES - CREATIVE WRITING (CLASSES IX & X)

Grade	Content/Analysis of Idea, Thought/ Feeling.	Expression/ Effective Expression of Idea	Structure/ Organisation of Material	Vocabulary/ Use of Words, Phrases	Originality/ Imaginative/ Innovative	Marks
I	The candidate analyses the ideas, feelings and experiences effectively. Reasoning is logical and effective.	The candidate expresses the ideas, thoughts and feelings effectively.	The work is very well structured with a sense of introduction, body, middle and conclusion, paragraphing and appropriate sentence construction.	The use of vocabulary exhibits a high level of competence in handling language.	The work is imaginative, interesting and engrossing.	4
II	The candidate analyses the ideas, feelings and experiences with well-defined explanations, reasoning is logical and persuasive.	The candidate expresses the ideas, thoughts and feelings well and with clarity.	The work is very well structured with some sense of conclusion and of paragraph lengths.	The vocabulary exhibits competence of word usage; correctness of grammar and spelling.	The candidate's work is quite interesting and engrossing.	3
III	The candidate analyses the ideas, feelings and experiences with a fair degree of detail and explanation. Reasoning is fairly logical and persuasive.	The candidate expresses the ideas, thoughts and feelings fairly well and with a fair degree of clarity.	The work is fairly well structured; candidate follows simple paragraphing.	The candidate uses straightforward vocabulary and fairly good pattern of spellings.	The candidate demonstrates the ability to sustain the interest of the reader.	2
IV	The candidate attempts to analyze ideas, feelings and experiences with simple explanation and detail. Reasoning and arguments are not very convincing.	The candidate expresses the ideas, thoughts and feelings intelligibly and in simple language.	The work shows some understanding of paragraphing and structure.	The candidate's vocabulary is limited and the spelling, punctuation and grammar is sometimes poor.	The candidate is, to some extent, able to sustain the interest of the reader.	1
V	The candidate attempts a basic analysis of ideas, feelings and experiences with few simple explanations and few details. Is unable to present proper arguments.	The candidate is unable to expresses the ideas, thoughts and feelings, uses simple language and the work is not very intelligible.	The candidate does not display an understanding of structure and paragraphing.	There is consistent weakness in spelling, punctuation and grammar.	The candidate is unable to sustain the interest of the reader.	0

INTERNAL ASSESSMENT IN INDIAN LANGUAGES - GUIDELINES FOR MARKING WITH GRADES-AURAL ASSIGNMENT (CLASS IX)

Grade	Understanding/ Comprehension Main Idea, Central Theme	Recall	Vocabulary	Context/ Correlation to Other Areas	Marks
I	The candidate accurately understands the central idea of the passage as well as the relevant points in the selected passage/ talk.	The candidate recalls all the important points made (written/ verbal).	The candidate uses appropriate and correct vocabulary while recalling the points made.	The candidate clearly understands the context and can widely correlate the passage to the other areas.	3
II	The candidate gives ideas fairly close to the central / main idea of the passage as well as understand some of the relevant points heard in the selected passage/ talk.	The candidate recalls some of the important points made (written/ verbal).	The candidate uses correct but simple vocabulary while recalling the points made.	The candidate can moderately understand the context of the passage and can moderately correlate the passage to the other areas.	2
III	The candidate cannot fully comprehend the passage and gives only a few ideas related to the central theme of the passage.	The candidate recalls very few of the important points made (written/verbal).	The candidate makes various errors in vocabulary while recalling the points made.	The candidate can only faintly understand the context of the passage and relate it to the other areas.	1
IV	The candidate is neither able to understand the central/main idea of the passage; nor able to understand relevant points heard in the passage/talk.	The candidate is unable to recall the important points made (written/verbal)	The candidate uses incorrect vocabulary while recalling the points made.	The candidate is unable to understand the context of the passage and is unable to correlate the passage to the other areas.	0

INTERNAL ASSESSMENT IN INDIAN LANGUAGES - GUIDELINES FOR MARKING WITH GRADES- ORAL ASSIGNMENT (CLASS X)

Grade	Fluency of Language	Subject Matter	Organization	Vocabulary/ Delivery	Understanding	Gesture	Marks
I	Speaks with fluency and has full operational command over the language.	Matter is relevant, rich in content and original.	Content is well sequenced and well organized.	Uses appropriate vocabulary and pronounces words correctly.	While speaking, the candidate emphasizes the important points.	Uses natural and spontaneous gestures that are not out of place.	3
II	The candidate speaks with fairly good fluency and has reasonable operational command of the language.	The subject matter is mostly relevant, consisting of a few original ideas.	The content is satisfactorily sequenced and well organized.	The candidate pronounces most words correctly and uses simple vocabulary.	While speaking the candidate emphasizes most important points.	Uses some natural gestures.	2
III	The candidate speaks with poor fluency and does not communicate except for the most basic information.	The subject matter is irrelevant and lacks originality.	The subject content is very poor and lacks organisational structure.	The candidate pronounces many words incorrectly and uses inappropriate vocabulary.	While speaking, the candidate emphasizes some important points.	Uses very few natural gestures.	1
IV	The candidate cannot communicate even the most basic information.	The subject matter is negligible.	The subject content comprises of mere words with no structured sentences.	The candidate is unable to correctly pronounce most words and has a limited vocabulary.	While speaking, the candidate is unable to emphasize important points.	Uses no natural gestures.	0

INTERNAL ASSESSMENT IN INDIAN LANGUAGES (LITERATURE - PRESCRIBED TEXTS) - GUIDELINES FOR MARKING WITH GRADES (CLASSES IX & X)

Grade	Understanding of Text (Narrative)	Examples from Text	Understanding of text- Interpretation and Evaluation	Appreciation of Language, Characterization	Critical Appreciation -Personal Response	Marks
I	The candidate demonstrates expertise in giving an appropriate account of the text, with well-chosen reference to narrative and situation.	The account is suitably supported by relevant examples from the text.	The candidate understands the text with due emphasis on interpretation and evaluation.	The candidate appreciates and evaluates significant ways (structure, character, imagery) in which writers have achieved their effects.	The candidate is able to effectively reflect personal response (critical appreciation) to the text.	4
II	The candidate demonstrates a high level of competence in giving an account of the text, with appropriate references to the narrative and situation.	The account is supported by examples from the text.	The candidate understands the text with some emphasis on interpretation and evaluation.	The candidate appreciates and evaluates significant ways in which writers have achieved their effects.	The candidate is able to reflect a personal response to the text.	3
III	The candidate demonstrates competence in giving an account of the text with some reference to the narrative and situation.	The candidate understands the text and shows a basic recognition of the theme and can support it by a very few examples.	The candidate recognizes some aspects of the text used by authors to present ideas.	The candidate recognizes some of the significant ways in which the writers have used the language.	The candidate is able to communicate a personal response which shows appreciation.	2
IV	The candidate gives broad account of the text with reference to the narrative and situation.	The candidate understands the basic meaning of the text.	The candidate relates the text to other texts studied.	The candidate recognizes differences in the way authors write.	The candidate communicates straight forward personal response to the text.	1
V	The candidate is unable to demonstrate an understanding of the basic events in the text.	The candidate is unable to understand the text or support it with any examples.	The candidate is unable to relate to the other text studied.	The candidate is unable to recognize the differences in the way authors write.	The candidate is unable to give a personal view of the text studied.	0

HISTORY, CIVICS AND GEOGRAPHY (50)

HISTORY AND CIVICS

H.C.G. - Paper - 1

[Candidates offering History, Civics and Geography (Thailand) are not eligible to offer History, Civics and Geography]

CLASS IX

*There will be **one** paper of **two** hours duration carrying 80 marks and an Internal Assessment of 20 marks.*

*The paper will be divided into **two** parts, Part I and Part II.*

***Part I** (30 marks) will contain short answer questions set from the entire syllabus.*

*Candidates will be required to answer **all** questions.*

***Part II** (50 marks) will consist of Section A and Section B. Candidates will be required to answer **two** out of **three** questions from Section A and **three** out of **five** questions from Section B. The sections will correspond to the sections indicated in the syllabus.*

SECTION A: CIVICS

An elementary study is required of this section without verbatim study of the Constitutional Articles in detail.

1. Our Constitution

Definition of Constitution - date of adoption, date of enforcement and its significance. Features: Single Citizenship, Universal Adult Franchise, Fundamental Rights (names only) and Fundamental Duties, Directive Principles of State Policy (meaning), Welfare State (meaning only).

2. Elections

Meaning; Composition of Election Commission (in brief); Direct and Indirect election; General election; Mid-term election and By-election.

3. Local Self Government

(i) Rural: Three-tier system of Panchayati Raj – Gram Panchayat, Panchayat Samiti, Zila Parishad –functions (any four each).

(ii) Urban: Municipal Committees and Municipal Corporations – functions (any four each).

SECTION B: HISTORY

1. The Harappan Civilisation

Sources: Great Bath, Citadel, seals, bearded man, dancing girl, dockyard, script.

Urban planning. Decline of the Harappan civilization.

2. The Vedic Period

Sources: Vedas and Epics (brief mention);

Brief comparative study of Early and Later Vedic society.

3. Jainism and Buddhism

Causes for the rise of Jainism and Buddhism in the 6th century B.C. Doctrines.

4. The Mauryan Empire

Sources: Arthashastra, Indika, Ashokan Edicts, Sanchi Stupa.

Administration (Chandragupta Maurya and Ashoka); Ashoka's Dhamma.

5. The Sangam Age

Meaning of Sangam; Sources: Tirukkural (in brief).

6. The Age of the Guptas

Sources: Account of Fa-hien; *Allahabad Pillar Inscription.*

Contribution to the fields of Education (Nalanda University), Science (Aryabhatta) and Culture (works of Kalidasa, Deogarh temple).

7. Medieval India

(a) The Cholas

Sources: Inscriptions; Brihadishwara Temple.

Administration (Rajaraja I, Rajendra I).

(b) The Delhi Sultanate

Qutab Minar.

Political history and Administration (Alauddin Khilji and Muhammad Bin Tughlaq).

(c) The Mughal Empire

Sources: Ain-i-Akbari, Taj Mahal, Jama Masjid and Red Fort.

Political history and administration (Akbar)

8. The Modern Age in Europe

(a) Renaissance

Definition; causes (new trade routes, invention of the printing press) and impact on art, literature and science (Leonardo Da Vinci, William Shakespeare and Copernicus).

(b) Reformation

Meaning of Reformation; dissatisfaction with the practices of the Catholic Church, Counter Reformation.(meaning only).

(c) Industrial Revolution

Definition of the term. Socialism and Capitalism - meaning only.

INTERNAL ASSESSMENT

Any **one** project/assignment related to the syllabus.

Suggested Assignments

- 'The Indian constitution protects the rights of children, women, minorities and weaker sections.' Elaborate on the basis of a case study.
- 'Fundamental Duties complement Fundamental Rights.' Illustrate with the help of a Power Point Presentation.
- Highlight the civic issues of your locality and what suggestions would you offer to address them.
- Visit a museum or local site of historical importance and discuss its significance.
- Discuss the art and architectural features of any of these monuments: Buddhist Caves, Ajanta; Iron Pillar, Mehrauli; Gol Gumbaz, Bijapur; Mattancherry Synagogue, Cochin; KamakhyaTemple, Guwahati; St. Thomas Basilica, Chennai; Tower of Silence, Mumbai.
- Make a pictorial presentation of inventions and innovations as a result of the Industrial Revolution.
- Make a comparative study of the Harappan and the Mesopotamian Civilisations.

MATHEMATICS (51)

CLASS IX

*There will be **one** paper of **two and a half** hours duration carrying 80 marks and Internal Assessment of 20 marks.*

*The paper will be divided into **two** sections, Section I (40 marks) and Section II (40 marks).*

***Section I:** will consist of **compulsory** short answer questions.*

***Section II:** Candidates will be required to answer **four** out of **seven** questions.*

The solution of a question may require the knowledge of more than one branch of the syllabus.

1. Pure Arithmetic

Rational and Irrational Numbers

Rational, irrational numbers as real numbers, their place in the number system. Surds and rationalization of surds. Simplifying an expression by rationalizing the denominator. Representation of rational and irrational numbers on the number line.

Proofs of irrationality of $\sqrt{2}, \sqrt{3}, \sqrt{5}$

2. Commercial Mathematics

Compound Interest

(a) Compound interest as a repeated Simple Interest computation with a growing Principal. Use of this in computing Amount over a period of 2 or 3 years.

(b) Use of formula $A = P(1 + \frac{r}{100})^n$. Finding CI from the relation CI = A – P.

- *Interest compounded half-yearly included.*
- *Using the formula to find one quantity given different combinations of A, P, r, n, CI and SI; difference between CI and SI type included.*

Note: Paying back in equal installments, being given rate of interest and installment amount, **not included**.

3. Algebra

(i) Expansions

Recall of concepts learned in earlier classes.

$(a \pm b)^2$

$(a \pm b)^3$

$(x \pm a)(x \pm b)$

$(a \pm b \pm c)^2$

(ii) Factorisation

$a^2 - b^2$

$a^3 \pm b^3$

$ax^2 + bx + c$, *by splitting the middle term.*

(iii) Simultaneous Linear Equations in two variables. (With numerical coefficients only)

- *Solving algebraically by:*
  - *Elimination*
  - *Substitution and*
  - *Cross Multiplication method*
- *Solving simple problems by framing appropriate equations.*

(iv) Indices/ Exponents

Handling positive, fractional, negative and "zero" indices.

Simplification of expressions involving various exponents

$a^m \times a^n = a^{m+n}, a^m \div a^n = a^{m-n}, (a^m)^n = a^{mn}$

etc. Use of laws of exponents.

4. Geometry

(i) Triangles

(a) Congruency: four cases: SSS, SAS, AAS, and RHS. Illustration through cutouts. Simple applications.

(b) Mid-Point Theorem and its converse, equal intercept theorem

(i) Proof and simple applications of mid-point theorem and its converse.

(ii) Equal intercept theorem: proof and simple application.

(c) Pythagoras Theorem

Area based proof and simple applications of Pythagoras Theorem and its converse.

(ii) Rectilinear Figures

Proof and use of theorems on parallelogram.

- *Both pairs of opposite sides equal (without proof).*
- *Both pairs of opposite angles equal.*
- *One pair of opposite sides equal and parallel (without proof).*
- *Diagonals bisect each other and bisect the parallelogram.*
- *Rhombus as a special parallelogram whose diagonals meet at right angles.*
- *In a rectangle, diagonals are equal, in a square they are equal and meet at right angles.*

(iii) Circle*:*

(a) Chord properties

- *A straight line drawn from the centre of a circle to bisect a chord which is not a diameter is at right angles to the chord.*
- *The perpendicular to a chord from the centre bisects the chord (without proof).*
- *Equal chords are equidistant from the centre.*
- *Chords equidistant from the centre are equal (without proof).*
- *There is one and only one circle that passes through three given points not in a straight line.*

(b) Arc and chord properties:

- *If two arcs subtend equal angles at the centre, they are equal, and its converse.*
- *If two chords are equal, they cut off equal arcs, and its converse (without proof).*

Note: Proofs of the theorems given above are to be taught unless specified otherwise.

5. Statistics

Introduction, collection of data, presentation of data, Graphical representation of data, Mean, Median of ungrouped data.

(i) Understanding and recognition of raw, arrayed and grouped data.

(ii) Tabulation of raw data using tally-marks.

(iii) Understanding and recognition of discrete and continuous variables.

(iv) Mean, median of ungrouped data.

(v) Class intervals, class boundaries and limits, frequency, frequency table, class size for grouped data.

(vi) Grouped frequency distributions: the need to and how to convert discontinuous intervals to continuous intervals.

(vii) Drawing a frequency polygon.

6. Mensuration

Area and perimeter of a triangle, Area and circumference of circle. Surface area and volume of Cube and Cuboids.

(a) Area and perimeter of triangle (including Heron's formula).

(b) Circle: Area and Circumference. Direct application problems including Inner and Outer area.

Areas of sectors of circles other than quarter-circle and semicircle are not included.

(c) *Surface area and volume of 3-D solids: cube and cuboid including problems of type involving:*

- *Different internal and external dimensions of the solid.*
- *Cost.*
- *Concept of volume being equal to area of cross-section* x *height.*
- *Open/closed cubes/cuboids.*

7. Trigonometry

(a) *Trigonometric Ratios: sine, cosine, tangent of an angle and their reciprocals.*

(b) *Trigonometric ratios of standard angles - 0, 30, 45, 60, 90 degrees. Evaluation of an expression involving these ratios.*

(c) *Simple 2-D problems involving one right-angled triangle.*

(d) *Concept of trigonometric ratios of complementary angles and their direct application:*

sin A = cos (90 - A), cos A = sin (90 – A)

tan A = cot (90 – A), cot A = tan (90- A)

sec A = cosec (90 – A), cosec A=sec (90 – A)

8. Coordinate Geometry

Cartesian System, plotting of points in the plane for given coordinates, solving simultaneous linear equations in 2 variables graphically and finding the distance between two points using distance formula.

(a) *Dependent and independent variables.*

(b) *Ordered pairs, coordinates of points and plotting them in the Cartesian plane.*

(c) *Solution of Simultaneous Linear Equations graphically.*

(d) *Distance formula.*

INTERNAL ASSESSMENT

A minimum of two assignments are to be done during the year as prescribed by the teacher.

Suggested Assignments

- Conduct a survey of a group of students and represent it graphically - height, weight, number of family members, pocket money, etc.
- Planning delivery routes for a postman/milkman.
- Running a tuck shop/canteen.
- Study ways of raising a loan to buy a car or house, e.g. bank loan or purchase a refrigerator or a television set through hire purchase.
- Cutting a circle into equal sections of a small central angle to find the area of a circle by using the formula $A = \pi r^2$.
- To use flat cutouts to form cube, cuboids and pyramids to obtain formulae for volume and total surface area.
- Draw a circle of radius r on a ½ cm graph paper, and then on a 2 mm graph paper. Estimate the area enclosed in each case by actually counting the squares. Now try out with circles of different radii. Establish the pattern, if any, between the two observed values and the theoretical value (area = πr^2). Any modifications?

PHYSICAL EDUCATION (72)

CLASS IX

*There will be **one** written paper of **two hours** duration carrying 100 marks and Internal Assessment of 100 marks.*

*The written paper will be divided into **two** Sections, A and B.*

Section A:** will consist of **compulsory** short answer questions on **Section A** of the **syllabus.

***Section B:** Candidates will be required to answer questions on the rules, skills required and the methods of training of any **two** of the given team games.*

PART 1: THEORY – 100 Marks

Section A

1. The Human Anatomy and Physiology

(i) Skeletal System: Bones

Identification of the following bones within the body:

Neck – Cranium and Vertebrae, Shoulder – Scapula and Clavicle, Thorax – Ribs and Sternum, Fore limb – Humerus, radius, Ulna, Carpals, Metacarpals and Phalanges, Spine – Vertebrae, Hip – Pelvis, Hind limb – Femur, Patella, Fibula, Tibia, Tarsals, Metatarsals and Phalanges.

(ii) Functions of the skeletal system.

Framework and Support, Movement, Protection of vital organs, Mineral storage, Blood cell production.

(iii) Classification of different types of joints:

Fixed joints / fibrous joints (skull), Slightly movable joints / cartilaginous joints (knee, elbow), Freely movable joints / Synovial joints (wrist, ankle, shoulder, neck).

A brief explanation of the above types of joints with examples.

(iv) Types of joint movements in physical activities

Hinge joint - Flexion and Extension, Pivot join Rotation, Ball and Socket joint - Flexion, Extension, Adduction, Abduction, Internal and External rotation, Saddle joint - Flexion, Extension, Adduction, Abduction and Circumduction.

Meaning and examples of each of the above.

(v) Benefits of exercise on the Skeletal System

Increases flexibility, makes bones stronger, strengthens joints, Good posture, Brings about a healthy lifestyle.

2. Muscular System

(i) Types of muscles

Voluntary/ skeletal, Involuntary/ Smooth/ Cardiac Muscles, Isometric and isotonic

Meaning of the above along with and difference.

(ii) Identification of Muscles

Identification of the following muscles within the body: Latissimus dorsi, Deltoid, Rotator cuffs, Pectorals, Biceps, Triceps, Abdominals, Hip flexors, Gluteals, Hamstring group, Quadriceps group, Gastrocnemius, Tibialis anterior.

(iii) Benefits of exercise on the muscular system.

Increases strength, endurance and power, better neuromuscular coordination, improves posture, enhances flexibility, decreases chances of injury.

3. Respiratory System

(i) Pathway of Air into the body.

The mouth/nose, Pharynx, Larynx, Trachea, Bronchi, Bronchioles, Diaphragm, Lungs, Alveoli.

A brief understanding of the above with the help of diagrams.

(ii) Mechanics of Breathing

External respiration - breathing in oxygen and breathing out carbon dioxide, Diffusion of respiratory gasses in the alveoli, Internal respiration - cellular respiration

(iii) Oxygen Debt and lactic acid accumulation. *Meaning only.*

(iv) Second Wind.

Meaning only.

(v) Vital capacity and Tidal volume.

M*eaning and difference.*

(vi) Benefits of exercise on the respiratory system.

Increase in tidal volume, Respiratory muscles become stronger, increase in aerobic endurance, Faster rate of recovery to perform a physical activity.

4. Circulatory System

(i) Structure of the Heart.

Meaning and functions of: Atria (left and right atria), Ventricles (left and right ventricles), Arteries, Veins, Capillaries.

(ii) Heart rate, Stroke Volume, Cardiac output. *Meaning and difference.*

(iii) Mechanism of blood circulation.

A *brief understanding of the process of blood circulation.*

(iv) Blood

(a) Composition of Blood (Plasma, Red blood cells, White blood cells, Platelets).

Meaning and functions.

(b) Blood groups - A, B, AB, O and Rh factor; Hemoglobin; Blood pressure

Brief understanding of the Blood groups; donors and recipients. Hemoglobin: function only; Systolic and diastolic blood pressure (meaning and difference).

(v) Benefits of exercise on the Circulatory syste*m*

Increase in the size of heart, resting pulse increases, Reduction in heart related problems, Improvement of the cardio – vascular system, Increase in hemoglobin, Faster recovery to normal pulse after physical activity.

Section B

Any **two** of the following **games** are to be studied**:**

Cricket, Football, Hockey, Basketball, Volleyball, Badminton.

The details for each game are given below:

CRICKET

1. Knowledge of the game

2. Rules of the game

The Field of play: Diagram of the cricket field and pitch with measurements and specifications; The Ball (Shape, Material, Circumference, Weight); The Bat (Length, Width, Material); Stumps and bails (Height, Width); The Players (Number of players (playing eleven and substitutes); Substitutions; The Players' Equipment; Compulsory equipment; Types of matches (One day, Five days, Four days and T20); Officials and their duties (2 field umpires, 1 third umpire, 1 match referee and 2 scorers); The Ball in and out of Play; Ways of a batsman getting out.

3. Fundamental skills and technique

Batting (On drive, off drive, Square cut and Leg glance); Fielding (Close catching, catching 'In the outfield', Long barrier and Throwing); Bowling (In swing, Out swing, Yorker and Full toss); wicket-

keeping (Footwork, Catching the ball, and Diving).

4. Terminology:

Maiden over,	Hat trick,	Extra,
Dead rubber,	Seam bowling,	Over,
No ball,	Bouncer,	Sight screen,
Bump ball,	Danger area,	Power play,
Overthrow,	Declaration,	Appeal,
Bodyline Bowling,	Dot ball,	Substitute,
Dead ball,	Ball-tampering,	Century,
Follow-on,	Golden duck,	Nick,
Nightwatchman,	Tail ender,	pull shot,
Innings defeat,	Cover drive,	Innings,
Straight drive,	sweep shot,	Hook shot,
Reverse sweep,	Upper cut,	Late cut,
Leg glance,	pull shot,	Flick shot,
Beamer,	Off cutter,	Leg cutter,
Short pitch,	Full length delivery,	
Reverse swing,		

5. National and International governing bodies of Cricket

BCCI - Board of Control for Cricket in India
ICC - International Cricket Council.

6. National and International tournaments

National Tournament: Ranji Trophy, Duleep Trophy, Vijay Hazare Trophy, Deodhar Trophy, Irani Trophy, Indian Premier League
International Tournaments: ICC Cricket World Cup, ICC champions Trophy, ICC World T20, World Cricket League.

FOOTBALL

1. Knowledge of the game

2. Laws of the game

The Field of play: Diagram of the Field with Measurements and Specifications, Height and Width of Goalpost, Height of Corner flags

The Ball: Shape, Material, Circumference, weight, Air pressure

The Players: Number of players (playing eleven and substitutes), Number of substitutions allowed in a match, Substitution procedure

The Players' Equipment, Compulsory Equipment

The Referee: Powers and Duties, Compulsory Equipment, Referee signals

Other match officials: Assistant Referees: Duties and Signals; Fourth official: Duties; Additional assistant referee: Duties; Reserve assistant referee: Duties

The Duration of the Match: Periods of play, Half-time interval, Allowance for time lost, Penalty kick, Abandoned match

The Start and Restart of Play: Kick-off and its Procedure (start, both halves, both halves of extra time and restarts play after a goal), Free kicks and its Procedure (Direct and Indirect), Penalty Kicks and its Procedure, Throw-in and its Procedure, Goal kicks and its Procedure, Corner Kicks and its Procedure

The Ball in and out of Play

Determining the outcome of a match: Goal scored, Winning team, Kicks from the penalty mark

Offside: Offside position, Offside offence, No offence

Fouls and Misconduct: Direct free kick, Indirect free kick, Disciplinary action (Yellow card and Red card), Restart of play after fouls and misconduct.

3. Fundamental Skills and Technique

Passing (Short pass and Long pass); Trapping (Step trap, inside trap, Thigh trap, Chest trap and Head trap); Shooting (Instep, Swerve shot, Chip and toe punt); Dribbling; Receiving; Heading; Tackle; Goalkeeping.

4. Terminology

Advantage,	Zonal marking,	Sliding Tackle,
Through pass,	Quarter Circle,	Man-to-Man Marking,
Additional time,	Extra time,	Nutmeg,
One-on-one,	Step over,	Technical area,
Volley,	Half Volley,	Attacker,
Defender,	Chip,	Cross,
Overlap,	Lob,	Banana Kick,
Bicycle Kick,	Wall Pass,	Goal line technology (GLT).

5. National and International Governing Bodies

AIFF - All India Football Federation
FIFA - Federation Internationale de Football Association
IFAB - International Football Association Board

6. National and International Tournaments

National Tournament: Santosh Trophy, Subroto Cup, Federation Cup, Durand Cup, I – League
International Tournament: FIFA World Cup, UEFA European Championship, AFC Cup

HOCKEY

1. Knowledge of the game

2. Rules of the game

Field of play: Diagram of the Field with Measurements and Specifications
Composition of teams: Number of Players, Substitution rule for Field players and Goalkeepers
Captains: Identity and Responsibility
Players' clothing and equipment: Uniform and equipment of field players, Goalkeepers
Match and result: Duration of the match and half time, Result of match
Start and re-start of the match: Procedure of Start (centre pass) and Re-start (Bully, Free hit, Second half)
Ball outside the field: Procedure to re-start from different areas, side line, back line, after every goal
Method of scoring
Conduct of play: Players, Goalkeepers and Players with Goalkeeping Privileges; Umpires (Responsibilities of Umpires).
Penalties and procedures for taking penalties: Awarding: Free Hit, Penalty Corner and Penalty Stroke; Procedures: Free hit, Penalty corner, Penalty stroke
Personal Penalties: Cautions (Verbal warning); Temporary suspension: Green Card - 2 minutes suspension, Yellow Card- 5 minutes suspension; Permanent suspension (Red Card)

3. Equipment Specifications

Field Equipment: Goal-post: (side board, back board and net); Flag post
Hockey Stick (Specification and Properties)
Ball: Shape, Material, Circumference, Weight, Colour

4. Fundamental Skills and Technique

Passing (Push, Drive and Sweep)
Trap (Upright stop & Flat stop)
Dribbling (Straight dribble, Loose dribble, Indian dribble, Dribbling pull back, One hand dribble: right hand and reverse side) Shooting, Goalkeeping

5. Terminology

Forehand,	Playing Distance,	Tackle, Back
Stick,	Dangerous Play,	Field Goal,
Obstruction,	Raised Ball,	High Stick,
Hooking,	Reverse stick,	Push, Scoop,
Advantage	Flick,	High ball,
Shooting circle,	Under cutting,	Jab,
Foot,	Give-and-go,	Carry the
ball,	Centre pass,	Back pass,
Reverse hit,	Rebound,	Rusher, Long
corner,	Through pass,	Stroke,
Cross,	16-yard hit,	

6. National and International Governing Bodies

FIH - Fédération Internationale de Hockey (French)
IHF - Indian Hockey Federation

7. National and International tournaments

National Tournaments: All India Gurmeet Memorial Hockey Tournament. Chandigarh, All India Chhatrapati Shivaji Hockey Tournament. Delhi, All India Indira Gold Cup Hockey Tournament, Jammu.
International Tournaments: Sultan Azlan Shah Hockey Tournament, World Hockey Cup, Champions Trophy.

BASKETBALL

1. Knowledge of the game

2. Rules and Regulations of the Game

Court: Diagram of the court with Dimensions and

Specifications, Meaning of Court areas, lines, circle, semi-circle, position of the scorer's table and substitution chairs.
Equipment needed to conduct the game

Teams: Definition, Rules, Players uniform
Injured players
Captain and Coaches: Duties and powers

Duration of Play

Playing time, Tied score and Extra periods

Status of the ball: Ball Live, Ball Dead

Jump ball and Alternating possession: Jump ball: Definition, Procedure and Situations; Alternating possession: Definition and Procedure

How the ball is played: Definition and Rule

Control of Ball: Definition, Team Control: Continues and Ends

Goal: When made and its value, Definition, Rule of scoring

Throw-in, time-out, substitution: Definition, Rules and procedures.

Game Lost by Forfeit, default, violation: Rules and Penalty

Player out of bounce and Ball Out of Bounds: Definition and Rule

Dribbling: Definition, a dribble starts, a dribble ends, rule for dribbling

Travelling: Definition, Pivot

Closely Guarded Player: Definition and Rule

3 Seconds rule, 8 Seconds rule, 24 Seconds rule and procedure

Ball returned to backcourt: Definition, Rule and Penalty

Goaltending and Interference: Definition and rule; Meaning and penalty of Interference; Penalty for The Respective Violations.

Fouls – Definition; Personal Foul, Double Foul - Definition and Penalty; Technical Foul: Rules of conduct, Violence, Definition and Penalty; Unsportsmanlike Foul, Disqualifying foul - Definition and Penalty.

Fighting - Definition, Rule and Penalty; Penalty for the respective Fouls; Five fouls by a player; Team fouls: Definition and Rule.

Contact: General principles: Cylinder principle, Principle of verticality, Legal guarding position, guarding a player who controls the ball, Guarding a player who **does not** control the ball, A player who is in the air, Screening (Legal and Illegal), Charging, Blocking, No charge semi-circle areas, Contacting an opponent with the hand(s) or arm(s), Holding, Pushing

Free Throws - Definition, Rule and Penalty

Duties and Powers of: Officials, Table officials and Commissioner; Referee; Scorer and Assistant Scorer; Timer; Short clock operator.

3. Fundamental Skills and Technique

Dribbling (high dribble, change of pace, crossover, between the legs and behind the back)

Passing (chest pass, bounce pass, baseball pass, outlet pass and no-look pass)

Shooting (layup, jump shot, hook shot, free throw, bank shot and slam dunk)

Defence (man to man defence, zone defence and combination defence)

Offence (early offence, set offence, motion offence, zone offence and spread offence)

Rebounding (Offensive and Defensive)

Pivot

4. Terminology

Drive,	Fake,	Fast Break,
Blocking,	Charge,	Carry,
Screen,	Double Dribble,	Travel,
Triple Threat,	Ball Handler,	Dead Ball,
Front Court,	Loose Ball,	Held Ball,
Dunk,	Field Goal,	Alley-Oop,
Back Court,	Press,	Box out,
Double foul,	Jump stop,	Timeout
Air ball,	Jump ball,	Game clock,
Block,	Possession arrow	

5. National and International Governing Bodies of Basketball

BFI - Basketball Federation of India

FIBA - Federation Internationale De Basketball

6. National and International tournaments

National Tournaments: Youth National Basketball Championships, Federation Cup Basketball Championship, UBA Pro Basketball League

International Tournaments: FIBA World, Championship, European Basketball Championship, FIBA Asia Championship

VOLLEYBALL

1. Knowledge of the game

2. Rules of the game

Playing Area: Diagram of the Play Area with Measurements and Specifications; Diagram of Net, Antenna and Posts with measurements and specifications

Ball: Shape, Material, Weight, Circumference, Air Pressure

Composition of teams

Players equipment and forbidden objects

Team Leaders: Responsibility of Captain, Coach and Assistant coach

Playing Format: To score a point, To win a set, To win the match

Structure of Play: The Toss, Official warm-up session, Team starting line-up, Positions and Positional fault, Rotation and Rotation fault

States of Play: Ball in play, Ball out of play, Ball "IN", Ball "OUT"

Playing the ball: Team Hits, Characteristics of the hit, Faults in playing the ball, Ball at the net, Ball crossing the net, Ball touching the net, Ball in the net

Player at the net: Reaching beyond the net, Penetration under the net, Contact with the net, Player's faults at the net

Service: First service in a set, Service order, Authorization of the service, Execution of the service, Screening, Faults made during service, Serving faults and Positional faults

Attack hit: Characteristics, Restrictions, Faults

Block: Blocking, Block contact, Blocking within the opponent's space, Block and team hits, Blocking the service, Blocking faults

Interruptions, Delays and Intervals: Interruptions (meaning); Number of regular game interruptions; Sequence of regular game interruptions; Request for regular game interruptions;

Time-outs and Technical time-outs

Exceptional game interruptions: Injury/illness, External interference, Prolonged interruptions

Substitution: Limitation, Exceptional, Expulsion/disqualification, Illegal, Procedure, Improper request

Game delays: Types of delays, Delay sanctions

Intervals and change of court

Libero player: Designation of the Libero, Equipment, Actions involving the libero, Re-designation of a new libero

Participants' conduct: Sportsmanlike conduct, Fair play

Misconduct and its sanctions: Minor misconduct, Misconduct leading to sanction, Sanction scale,

Cards used: Warning (Verbal and Yellow card); Penalty (Red card); Expulsion (Red plus Yellow card jointly); Disqualification (Red plus Yellow card separately)

Referees: Composition, Procedures, Location, Authority and Responsibilities of: First referee, Second referee, Scorer, Assistant scorer, Line judges.

3. Fundamental Skills and Techniques

Service (Underhand, Topspin, Float, Jump serve and Jump float)

Pass (Underarm pass and Overhand pass)

Set (Overhead and Bump)

Attack/spike (Backcourt, Line and cross-court shot, Dip, Block-abuse, Off-speed hit, Quick hit, Slide and Double-quick hit)

Block (Single block, Double block and Triple block)

Dig

4. Terminology

Back row attack,	Block assist,	Side out,
Blocking error,	Floater,	Two set,
Extension roll,	Free ball,	Joust,
Overlapping,	Back set,	Carry,
Closing the block,	Ball down,	Quick set,
Serving zone,	Defence zone,	Attack zone,
Foot fault,	Net violation,	Trap set,

Reading an opponent,
Cross-court attack

5. National and International Governing Bodies of Volleyball

VFI - Volleyball Federation of India

FIVB - Federation International De Volleyball

6. National and International tournaments

National Tournaments: Indian Volleyball League, Federation Cup, Poornima Trophy

International Tournaments: World Championship, World Cup Volleyball, Super Challenge Cup

BADMINTON

1. Knowledge of the game

2. Rules of the game

Court: Diagram of the court with Measurements and Specifications, Court equipment (Posts and Net)
Shuttle: Dimensions and Specifications, Testing a shuttle for speed
Racket: Diagram of the racket with Measurements and Specifications
Toss: Procedure
Scoring system
Change of ends
Service: Singles (serving and receiving courts); Doubles: Serving and receiving courts, Order of play and position on court, Scoring and serving, Sequence of serving
Service court errors
Lets
Shuttle not in play
Continuous play, Misconduct and Penalties
Officials duties and appeals: Referee, Umpire, Service judge, Line judges

3. Fundamental Skills

Grip (Forehand grip and Backhand grip)
Footwork
Serve (High serve, Low serve, Flick serve)
Strokes (Overhead forehand stroke, Overhead backhand stroke, Underarm forehand stroke and Underarm backhand stroke)
Shots (Clearing/lobbing, Drop shots and Smash)

4. Terminology

Short serve	Long serve	Wide serve
Service order,	Love,	All,
Deuce,	Forecourt,	Mid-court,
Rear court,	Rally,	Set,
Rubber,	Lunge,	Clear lob,
Half smash,	Full smash,	Carry,
Baseline smash,	Drive,	Push shot,
Tumbling net shot,	Net kill,	Net lift
Hairpin net shot,	Alley,	Back alley,
Follow through,	Court,	Wood shot
Flick,	Bird,	

Singles footwork base

5. National and International Governing Bodies of Badminton

BAI - Badminton Association of India

BWF - Badminton World Federation

6. National and International tournaments

National Tournaments: Indian Open Badminton Championship, Senior National Badminton

championship.

International Tournaments: World Championship, Thomas Cup.

PART 2: INTERNAL ASSESSMENT - 100 Marks

Please note the guidelines for internal assessment as given for Class X.

SCIENCE (52)

PHYSICS

SCIENCE Paper - 1

CLASS IX

*There will be one paper of **two hours** duration carrying 80 marks and Internal Assessment of practical work carrying 20 marks.*

*The paper will be divided into **two** sections, Section I (40 marks) and Section II (40 marks).*

***Section I** (**compulsory**) will contain short answer questions on the entire syllabus.*

***Section II** will contain six questions. Candidates will be required to answer any **four** of these **six** questions.*

***Note:** Unless otherwise specified, only SI Units are to be used while teaching and learning, as well as for answering questions.*

1. Measurements and Experimentation

(i) International System of Units, **the required SI units with correct symbols are given at the end of this syllabus.** Other commonly used system of units - fps and cgs.

(ii) Simple pendulum

*Simple pendulum: time period, frequency, graph of length l versus T^2 only; slope of the graph. Formula $T=2.\pi.\sqrt{l/g}$ [**no** derivation]. Only simple numerical problems.*

2. Motion in One Dimension

Scalar and vector quantities, distance, speed, velocity, acceleration; equations of uniformly accelerated motion without derivations.

Examples of Scalar and vector quantities only, rest and motion in one dimension; distance and displacement; speed and velocity; acceleration and retardation [Non-uniform acceleration excluded].

Equations to be learned: $v = u + at$;

*$S = ut + \frac{1}{2}at^2$; $S = \frac{1}{2}(u+v)t$; $v^2 = u^2 + 2aS$. [Equation for $S_n{}^{th}$ is **not** included].*

Simple numerical problems.

3. Laws of Motion

(i) Contact and non-contact forces; cgs & SI units.

Examples of contact forces (frictional force, normal reaction force, tension force as applied through strings and force exerted during collision) and non-contact forces (gravitational, electric and magnetic). General properties of non-contact forces. cgs and SI units of force and their relation with Gravitational units.

(ii) Newton's First Law of Motion (qualitative discussion) introduction of the idea of inertia, mass and force.

*Newton's first law; statement and qualitative discussion; definitions of inertia and force from first law, examples of inertia as illustration of first law. (Inertial mass **not** included).*

(iii) Newton's Second Law of Motion (including **F**=ma); weight and mass.

Detailed study of the second law. Linear momentum, p = mv; change in momentum $\Delta p = \Delta(mv) = m\Delta v$ for mass remaining constant, rate of change of momentum;

$\Delta p/\Delta t = m\Delta v/\Delta t = ma$ or

$$\left\{\frac{p_2 - p_1}{t} = \frac{mv - mu}{t} = \frac{m(v-u)}{t} = ma\right\};$$

Simple numerical problems combining

$F = \Delta p/\Delta t = ma$ and equations of motion. Units of force - only cgs and SI.

(iv) Newton's Third Law of Motion (qualitative discussion only); simple examples.

Statement with qualitative discussion; examples of action - reaction pairs, (F_{BA} and F_{AB}); action and reaction always act on different bodies.

(v) Gravitation

Universal Law of Gravitation. (Statement and equation) and its importance. Gravity,

acceleration due to gravity, free fall. Weight and mass, Weight as force of gravity comparison of mass and weight; gravitational units of force, (*Simple numerical problems), (problems on variation of gravity excluded*)

4. Fluids

(i) Change of pressure with depth (including the formula p=hρg); Transmission of pressure in liquids; atmospheric pressure.

Thrust and Pressure and their units; pressure exerted by a liquid column p = hρg; simple daily life examples, (i) broadness of the base of a dam, (ii) Diver's suit etc. some consequences of p = hρg; transmission of pressure in liquids; Pascal's law; atmospheric pressure; common manifestation and consequences. Variations of pressure with altitude, (qualitative only); applications such as weather forecasting and altimeter. (Simple numerical problems including Pascal's law)

(ii) Buoyancy, Archimedes' Principle; floatation; relationship with density; relative density; determination of relative density of a solid using water only.

Buoyancy, upthrust (F_B); definition; different cases, F_B>, = or < weight W of the body immersed; characteristic properties of upthrust; Archimedes' principle; explanation of cases where bodies with density ρ >, = or < the density ρ' of the fluid in which it is immersed.

Relative Density (RD) and Archimedes' principle, determination of RD of a solid denser than water using water and RD of liquid. Floatation: principle of floatation; relation between the density of a floating body, density of the liquid in which it is floating and the fraction of volume of the body immersed; ($\rho_1/\rho_2 = V_2/V_1$); apparent weight of floating object; application to ship, submarine, iceberg, balloons, etc.

Simple numerical problems involving Archimedes' principle, buoyancy and floatation.

5. Heat and Energy

(i) Concepts of heat and temperature.

Heat as energy, SI unit – joule,

1 cal = 4.186 J exactly.

(ii) Anomalous expansion of water

Graphs showing variation of volume and density of water with temperature in the 0 to 10 ^{0}C range. Hope's experiment and consequences of Anomalous expansion.

(iii) Global warming and Green House effect.

Scientific definitions of the above.

6. Light

(i) Reflection of light; images formed by a pair of parallel and perpendicular plane mirrors;

Laws of reflection; experimental verification; characteristics of images formed in a pair of mirrors, (a) parallel and (b) perpendicular to each other; uses of plane mirrors.

(ii) Spherical mirrors; characteristics of image formed by these mirrors. Uses of concave and convex mirrors. (Only simple direct ray diagrams are required).

Brief introduction to spherical mirrors - concave and convex mirrors, centre and radius of curvature, pole and principal axis, focus and focal length; location of images from ray diagram for various positions of a small linear object on the principal axis of concave and convex mirrors; characteristics of images.

Uses of spherical mirrors.

Scale drawing or graphical representation of ray diagrams not required.

7. Sound

(i) Nature of Sound waves. Requirement of a medium for sound waves to travel; propagation and speed in different media; comparison with speed of light.

Sound propagation, terms – frequency (f), wavelength (λ), velocity (V), relation $V = f\lambda$. (Simple numerical problems) effect of different factors on the speed of sound; comparison of speed of sound with speed of light; consequences of the large difference in these speeds in air; thunder and lightning.

(ii) Infrasonic, sonic, ultrasonic f*requencies* and their applications.

Elementary ideas and simple applications only. Difference between ultrasonic and supersonic.

8. Electricity and Magnetism

(i) Simple electric circuit using an electric cell and a bulb to introduce the idea of current (including its relationship to charge); potential difference; insulators and conductors; closed and open circuits; direction of current (electron flow and conventional)

Current Electricity: brief introduction of sources of direct current - cells, accumulators (construction, working and equations excluded); Electric current as the rate of flow of electric charge (direction of current - conventional and electronic), symbols used in circuit diagrams. Detection of current by Galvanometer or ammeter (functioning of the meters not to be introduced). Idea of electric circuit by using cell, key, resistance wire/resistance box/rheostat, qualitatively.; elementary idea about work done in transferring charge through a conductor wire; potential difference V = W/q.

(*No derivation of formula****)*** *simple numerical problems.*

Social initiatives: Improving efficiency of existing technologies and introducing new eco-friendly technologies. Creating awareness and building trends of sensitive use of resources and products, e.g. reduced use of electricity.

(ii) Induced magnetism, Magnetic field of earth. Neutral points in magnetic fields.

Magnetism: magnetism induced by bar magnets on magnetic materials; induction precedes attraction; lines of magnetic field and their properties; evidences of existence of earth's magnetic field, magnetic compass. Uniform magnetic field of earth and non-uniform field of a bar magnet placed along magnetic north-south; neutral point; properties of magnetic field lines.

INTERNAL ASSESSMENT OF PRACTICAL WORK

Candidates will be asked to carry out experiments for which instructions are given. The experiments may be based on topics that are not included in the syllabus but theoretical knowledge will not be required. A candidate will be expected to be able to follow simple instructions, to take suitable readings and to present these readings in a systematic form. He/she may be required to exhibit his/her data graphically. Candidates will be expected to appreciate and use the concepts of least count, significant figures and elementary error handling.

A set of 5 to 7 experiments may be designed as given below or as found most suitable by the teacher. Students should be encouraged to record their observations systematically in a neat tabular form - in columns with column heads including units or in numbered rows as necessary. The final result or conclusion may be recorded for each experiment. Some of the experiments may be demonstrated (with the help of students) if these cannot be given to each student as lab experiments.

1. Determine the least count of the Vernier callipers and measure the length and diameter of a small cylinder (average of three sets) - may be a metal rod of length 2 to 3 cm and diameter 1 to 2 cm.

2. Determine the pitch and least count of the given screw gauge and measure the mean radius of the given wire, taking three sets of readings in perpendicular directions.

3. Measure the length, breadth and thickness of a glass block using a metre rule (each reading correct to a mm), taking the mean of three readings in each case. Calculate the volume of the block in cm^3 and m^3. Determine the mass (not weight) of the block using any convenient balance in g and kg. Calculate the density of glass in cgs and SI units using mass and volume in the respective units. Obtain the relation between the two density units.

4. Measure the volume of a metal bob (the one used in simple pendulum experiments) from the readings of water level in a measuring cylinder using displacement method. Also calculate the same volume from the radius measured using Vernier callipers. Comment on the accuracies.

5. Obtain five sets of readings of the time taken for 20 oscillations of a simple pendulum of lengths about 70, 80, 90, 100 and 110 cm; calculate the time periods (T) and their squares (T^2) for each length (l). Plot a graph of l vs. T^2. Draw the best - fit straight - line graph. Also, obtain its slope. Calculate the value of g in the laboratory. It is $4\pi^2$ x slope.

6. Take a beaker of water. Place it on the wire gauze on a tripod stand. Suspend two thermometers - one with Celsius and the other with Fahrenheit scale. Record the thermometer readings at 5 to 7 different temperatures. You may start with ice-cold water, then allow it to warm up and then heat it slowly taking temperature (at regular intervals) as high as possible. Plot a graph of T_F vs. T_C. Obtain the slope. Compare with the theoretical value. Read the intercept on T_F axis for $T_C = 0$.

7. Using a plane mirror strip mounted vertically on a board, obtain the reflected rays for three rays incident at different angles. Measure the angles of incidence and angles of reflection. See if these angles are equal.

8. Place three object pins at different distances on a line perpendicular to a plane mirror fixed vertically on a board. Obtain two reflected rays (for each pin) fixing two pins in line with the image. Obtain the positions of the images in each case by extending backwards (using dashed lines), the lines representing reflected rays. Measure the object distances and image distances in the three cases. Tabulate. Are they equal? Generalize the result.

9. Obtain the focal length of a concave mirror (a) by distant object method, focusing its real image on a screen or wall and (b) by one needle method removing parallax or focusing the image of the illuminated wire gauze attached to a ray box. One could also improvise with a candle and a screen. Enter your observations in numbered rows.

10. Connect a suitable dc source (two dry cells or an acid cell), a key and a bulb (may be a small one used in torches) in series. Close the circuit by inserting the plug in the key. Observe the bulb as it lights up. Now open the circuit, connect another identical bulb in between the first bulb and the cell so that the two bulbs are in series. Close the key. Observe the lighted bulbs. How does the light from any one bulb compare with that in the first case when you had only one bulb? Disconnect the second bulb. Reconnect the circuit as in the first experiment. Now connect the second bulb across the first bulb. The two bulbs are connected in parallel. Observe the brightness of any one bulb. Compare with previous results. Draw your own conclusions regarding the current and resistance in the three cases.

11. Plot the magnetic field lines of earth (without any magnet nearby) using a small compass needle. On another sheet of paper, place a bar magnet with its axis parallel to the magnetic lines of the earth, i.e. along the magnetic meridian or magnetic north south. Plot the magnetic field in the region around the magnet. Identify the regions where the combined magnetic field of the magnet and the earth is (a) strongest, (b) very weak but not zero, and (c) zero. Why is neutral point, so called?

12. Using a spring balance obtain the weight (in N) of a metal ball in air and then completely immersed in water in a measuring cylinder. Note the volume of the ball from the volume of the water displaced. Calculate the upthrust from the first two weights. Also calculate the mass and then weight of the water displaced by the bob $M=V.\rho$, $W=mg$). Use the above result to verify Archimedes principle.