

SYLLABUS FOR THE YEAR 2022-2023

CLASS : XII (SCIENCE)

ENGLISH CORE

Term I	<p>Reading : Unseen passage to assess comprehension, interpretation and Inference. The passage may be factual, descriptive or literary. Case based passage with verbal/visual inputs like statistical data, charts etc</p> <p>Writing : Notice up to 50 words. Letter based on verbal/ visual input, to be answered in 120-150 words. Letter types include application for job with Bio data or resume. Letter to the editor. Formal/Informal Invitation and Reply up to 50 words Article/Report writing, descriptive and analytical in nature, based on verbal inputs, to be answered in 120-150 words</p> <p>Literature: Prose/Flamingo : Chapter 1. The Last Lesson. Chapter 2. The Lost Spring Chapter: 3. Deep Water. Chapter 4. Rattrap Chapter: 5. Indigo Chapter 6. Poets and Pancakes. Chapter 7. The Interview</p> <p>Poetry/Flamingo : Poem 1 : My Mother at Sixty Six Poem 3 : Keeping Quiet . Poem 4 : A Thing of Beauty Poem 5. A Roadside Stand. Poem 6. Aunt Jennifer's Tigers</p> <p>Vistas : Chapter : 1. The Third Level. Chapter 2. The Tiger King Chapter : 3. Journey to the End of the Earth. Chapter 4 The Enemy Chapter 6. On the Face of It. Chapter 8. Memories of Childhood</p>
Pre-Board Examination	<p>Reading : Full course as per CBSE Syllabus</p> <p>Writing : Full course as per CBSE Syllabus</p> <p>Literature: Flamingo/prose: chapter 8. Going places and Full Course</p> <p>Poetry: Full course</p> <p>Vistas : Full course</p>
INTERNAL ASSESSMENT	<p>Assessment of Listening Skills</p> <p>Assessment of Speaking Skills</p> <p>Project Work</p>
Deleted Chapters	<p>Flamingo/Prose NIL</p> <p>Poetry: Chapter 2. An Elementary Classroom in A Slum</p> <p>Vistas: Chapter 5. Should Wizard Hit Mommy Chapter 7. Evans Tries an O-level</p>

PHYSICS

Term I	<p>ACCORDING TO NCERT BOOK</p> <p>CHAPTER: - 1 : ELECTRIC CHARGES AND FIELDS</p> <p>CHAPTER: - 2 : ELECTROSTATIC POTENTIAL AND CAPACITANCE</p> <p>CHAPTER: - 3 : CURRENT ELECTRICITY</p> <p>CHAPTER: - 4 : MOVING CHARGES AND MAGNETISM</p> <p>CHAPTER: - 5 : MAGNETISM AND MATTER</p> <p>CHAPTER: - 6 : ELECTROMAGNETIC INDUCTION</p> <p>CHAPTER: - 7 : ALTERNATING CURRENT</p> <p>CHAPTER: - 8 : ELECTROMAGNETIC WAVES</p> <p>CHAPTER: - 9 : RAY OPTICS AND OPTICAL INSTRUMENTS</p> <p>CHAPTER: - 10 : WAVE OPTICS</p> <p>CHAPTER: - 11 : DUAL NATURE OF RADIATION AND MATTER</p> <p>CHAPTER: - 12 : ATOMS</p>
Pre-Board Examination	ACCORDING TO NCERT BOOK : FULL COURSE AS PER CBSE SYLLABUS 2022-23

IMPORTANT NOTE: THE CONTENT INDICATED IN NCERT TEXTBOOKS AS EXCLUDED FOR THE SESSION 2022-23 IS NOT INCLUDED AND IS NOT TO BE TESTED IN ANY EXAMS. FOLLOW THE LATEST SYLLABUS STRICTLY FOR THE SESSION 2022-23.

Syllabus 2022-23
Class 12 Physics Practical

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

- Record of at least 8 Experiments [with 4 from each section], to be performed by the students.
- Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.
- Report of the project carried out by the students.

EVALUATION SCHEME

Time 3 hours

Max. Marks: 30

Topic	Marks
Two experiments one from each section	7+7
One activity from any section	3
Practical record (experiment and activities)	5
Investigatory Project	3
Viva on experiments, activities and project	5
Total	30

Section-A
Experiments

1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current.
2. To find resistance of a given wire / standard resistor using metre bridge.
3. To verify the laws of combination (series) of resistances using a metre bridge.

OR

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

4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
5. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.

Activities:-

1. To assemble the components of a given electrical circuit.
2. To study the variation in potential drop with length of a wire for a steady current.
3. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

Section-B

Experiments:-

1. To find the value of v for different values of u in case of a concave mirror and to find the focal length. 2. To find the focal length of a convex mirror, using a convex lens.
3. To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$.
4. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
5. To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.

Activities:-

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
2. Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.
3. To observe diffraction of light due to a thin slit.

CHEMISTRY

Term I	CHAPTER 1 – SOLUTION CHAPTER 2 – ELECTRO CHEMISTRY CHAPTER 3 – CHEMICAL KINETICS CHAPTER 4 – d - & f-BLOCK ELEMENTS CHAPTER 5 – CO-ORDINATION CHEMISTRY CHAPTER 6 – HALOALKANES AND HALOARENES CHAPTER 7 – ALCOHOLS, PHENOLS AND ETHERS CHAPTER 8 – ALDEHYDES, KETONES AND CARBOXYLIC ACIDS CHAPTER 9 - AMINES
Pre-Board Examination	Full Course (As per the CBSE reduced Syllabus 2022-23)

PRACTICALS 3 HOURS/ 30 MARKS

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

PRACTICAL SYLLABUS

60 Periods

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

A. Surface Chemistry

- Preparation of one lyophilic and one lyophobic sol
Lyophilic sol - starch, egg albumin and gum
Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.
- Dialysis of sol-prepared in (a) above.
- Study of the role of emulsifying agents in stabilizing the emulsion of different oils.

B. Chemical Kinetics

- Effect of concentration and temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid.
- Study of reaction rates of any one of the following:
 - Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentrations of Iodide ions.
 - Reaction between Potassium Iodate, (KIO₃) and Sodium Sulphite: (Na₂SO₃) using starch solution as an indicator (clock reaction).

C. Thermochemistry

Any one of the following experiments

- Enthalpy of dissolution of Copper Sulphate or Potassium Nitrate.
- Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH).
- Determination of enthalpy change during interaction (Hydrogen bond formation) between Acetone and Chloroform.

D. Electrochemistry

Variation of cell potential in Zn/Zn²⁺ || Cu²⁺/Cu with change in concentration of electrolytes (CuSO₄ or ZnSO₄) at room temperature.

E. Chromatography

- Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of R_f values.
- Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in R_f values to be provided).

F. Preparation of Inorganic Compounds

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

G. Preparation of Organic Compounds

Preparation of any one of the following compounds

- Acetanilide
- Di-benzal
- Acetone
- p-Nitroacetanilide
- Aniline yellow
- or 2-Naphthol
- Aniline dye.

H. Tests for the functional groups present in organic compounds:

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

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

J. Determination of concentration/ molarity of KMnO₄ solution by titrating it against a standard solution of:

- (a) Oxalic acid,
 (b) Ferrous Ammonium Sulphate
 (Students will be required to prepare standard solutions by weighing themselves).

K. Qualitative analysis

Determination of one anion and one cation in a given salt

Cation:

Pb^{2+} , Cu^{2+} , As^{3+} , Al^{3+} , Fe^{3+} , Mn^{2+} , Zn^{2+} , Ni^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , NH_4^+

Anions:

$(CO_3)^{2-}$, S^{2-} , $(SO_3)^{2-}$, $(NO_2)^-$, $(SO_4)^{2-}$, Cl^- , Br^- , I^- , $(PO_4)^{3-}$, $(C_2O_4)^{2-}$, CH_3COO^- , NO^-

(Note: Insoluble salts excluded)

INVESTIGATORY PROJECT

Scientific investigations involving laboratory testing and collecting information from other sources A few suggested Projects.

- Study of the presence of oxalate ions in guava fruit at different stages of ripening.
- Study the quantity of casein present in different samples of milk.
- Preparation of soybean milk and its comparison with natural milk with respect to curd formation, the effect of temperature, etc.
- Study of the effect of Potassium Bisulphate as a food preservative under various conditions (temperature, concentration, time, etc.)
- Study of digestion of starch by salivary amylase and effect of pH and temperature on it.
- Comparative study of the rate of fermentation of the following materials: wheat flour, gram flour, potato juice, carrot juice, etc.
- Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).
- Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.

BIOLOGY

Term I	Chapter 2, 3, 4, 5, 6, 7, 8, 10, 11, 12
Pre-board Examination	Chapter 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15 (Deleted Chapters 1, 9, and 16)

SYLLABUS FOR BIOLOGY PRACTICALS

PRACTICALS

Time allowed: 3 Hours

Max. Marks: 30

Evaluation Scheme		Marks
One Major Experiment	5	5
One Minor Experiment	2 & 3	4
Slide Preparation	1 & 4	5
Spotting		7
Practical Record + Viva Voce		4
Investigatory Project and its Project Record + Viva Voce	(Credit to the students' work over the academic session may be given)	5
Total		30

A. List of Experiments

1. Prepare a temporary mount to observe pollen germination.
2. Study the plant population density by quadrat method.
3. Study the plant population frequency by quadrat method.

4. Prepare a temporary mount of onion root tip to study mitosis.
5. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

B. Study and observe the following (Spotting):

1. Flowers adapted to pollination by different agencies (wind, insects, birds).
2. Pollen germination on stigma through a permanent slide or scanning electron micrograph.
3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
4. Meiosis in onion bud cell or grasshopper testis through permanent slides.
5. T.S. of blastula through permanent slides (Mammalian).
6. Mendelian inheritance using seeds of different colour/sizes of any plant.
7. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, bloodgroups, ear lobes, widow's peak and colour blindness.
8. Controlled pollination - emasculation, tagging and bagging.
9. Common disease causing organisms like *Ascaris*, *Entamoeba*, *Plasmodium*, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause.
10. Models specimen showing symbiotic association in root modules of leguminous plants, *Cuscuta* on host, lichens.
11. Flash cards models showing examples of homologous and analogous organs.

MATHEMATICS

Term I	Chapter 1 . Relation and Functions Chapter 2. Inverse Trigonometry Function Chapter 3. Matrices Chapter 4. Determinants Chapter 5. Differentiability & Continuity Chapter 6. Application of Derivatives Chapter 7. Integration Chapter 8. Application of Integration Chapter 9. Differential Equation Chapter 10. Vector Algebra Chapter 11. Three-dimensional Geometry
Pre-Board Examination	Full Course as per CBSE syllabus 2023 and Sample Paper

Maths Activity : Throughout the Academic Session any 10 activities shall be performed by a student out of 10, One will be given in an year end test on the activity. **Activities No. 1, 2, 3, 4, 9, 15, 16, 17, 18, 27 from Mathematics Lab Manual Class XII Published by NCERT.**

	Record Keeping	5 marks	
	Year End Test	3 marks	
	Viva Voce	2 marks	
	Total	10 marks	
	Grand Total	20 marks	

SUBJECT: Computer Sc. [New] 083

Term I

Unit Test-1

Unit I: Computational Thinking and Programming-2

- Revision of Python topics covered in Class XI.

Functions: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (globalscope, local scope).

Term I

Unit III: Database Management

- Database concepts: Introduction to database concepts and its need
- Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key)
- Structured Query Language: Introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null, unique, primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table, insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete command, aggregate functions (max, min, avg, sum, count), group by, having clause, joins: cartesian product on two tables, equi-join and natural join

Unit I: Computational Thinking and Programming-2 continued....

- Introduction to files, types of files
- Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause, writing/appending data to a text file using write() and writelines(), reading from a text file using read(), readline() and readlines(), seek and tell methods, manipulation of data in a text file
- Binary file: basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append and update operations in a binary file
- CSV file: import csv module, open / close csv file, write into a csv file using csv.writer() and read from a csv file using csv.reader()
- Data Structure: Stack, operations on stack (push & pop), implementation of stack using list.

Weightage Unit-I: 45 marks Unit-III: 25 marks **Total:** 70 marks

Practical Examination and Project as per CBSE Guidelines

PRE BOARD COURSE

Unit II: Computer Networks

- Evolution of networking: Introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)
- Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching)
- Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Microwaves, Infrared waves)
- Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card)
- Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree)
- Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP
- Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting

Weightage Unit-I: 40 marks Unit-II: 10 marks Unit-III: 20 marks **Total:** 70 marks

Note: Revision: Term I course

ENTREPRENEURSHIP

Term I

Unit 1 – Entrepreneurial Opportunity
Unit 2 – Enterprise Planning
Unit 3 – Enterprise Marketing
Unit 4 – Enterprise Growth Strategies
Unit 5 – Business Arithmetic

Pre-Board Examination

FULL COURSE AS PER CBSE SYLLABUS + PROJECT WORK