

Class – XI (Science)(2023-2024)
English

Ist Term **(April - September)**

| | | |
|------------------|------------------------|--|
| APRIL | LITERATURE: | Portrait of a Lady The Photograph |
| | WRITING SKILLS: | Articles, Notice Writing, Posters |
| MAY | READING: | Unseen Passage Note-Making |
| | LITERATURE: | Discovering Tut;The Saga Continues Voice of Rain The Summer of the Beautiful White Horse |
| JULY | LITERATURE: | The Address |
| | WRITING SKILLS: | Reports Business Letters Job Applications |
| AUGUST | LITERATURE: | Albert Einstein at School The Browning Version |
| | WRITING SKILLS: | Invitations and Replies |
| SEPTEMBER | | REVISION ALS |

2nd Term **(October - February)**

| | | |
|-----------------|------------------------|--|
| October | LIERATURE: | Father to Son Childhood Birth |
| NOVEMBER | WRITING SKILLS: | Speech, Debate, Advertisements |
| DECEMBER | LITERATURE: | Mother’s Day The Tale of Melon City |
| JANUARY | | ALS |
| FEBRUARY | | Revision & Annual Examination |

ENGLISH CORECODE
NO. 301 CLASS – XI

2023-24

Section A – 26 Marks Reading Skills

I Reading Comprehension through Unseen Passages

(10+8=18 Marks)

1. One unseen passage to assess comprehension, interpretation, analysis, inference and vocabulary. The passage may be factual, descriptive or literary.
2. One unseen **case-based factual** passage with verbal/visual inputs like statistical data, charts etc. to assess comprehension, interpretation, analysis, inference and evaluation.

Note: The combined word limit for both the passages will be 600-750.

Multiple Choice Questions / Objective Type Questions will be asked.

3. Note Making and Summarization based on a passage of approximately 200-250 words.

| | | |
|----------|----------------------------|----------------|
| i | Note Making: | 5 Marks |
| | • | |
| | ◦ Title: | 1 |
| | ◦ Numbering and indenting: | 1 |
| | ◦ Key/glossary: | 1 |
| | ◦ Notes: | 2 |
| i | Summary (up to 50 words): | 3 Marks |
| | • | |
| | ◦ Content: | 2 |
| | ◦ Expression: | 1 |

Section B – 23 Marks Grammar and Creative Writing Skills

II Grammar

7 Marks

4. Questions on Gap filling (Tenses, Clauses)
5. Questions on re-ordering/transformation of sentences

(Total seven questions to be done out of the eight given).

III Creative Writing Skills

16 Marks

6. Short writing task – Classified Advertisements, up to 50 words. One out of the two given questions to be answered **(3 Marks: Format : 1 / Content : 1 / Expression : 1)**
7. Short writing task –Poster up to 50 words. One out of the two given questions to be answered. **(3 marks: Format : 1 / Content : 1 / Expression : 1)**
8. Long Writing task: Speech in 120-150 words based on verbal / visual cues related to contemporary / age-appropriate topic. One out of the two given questions to be answered. **(5 Marks: Format: 1 / Content: 2 / Expression: 2)**
9. Long Writing Task: Debate based on visual/verbal inputs in 120-150 words, thematically related to contemporary, topical issues. One out of the two given questions to be answered. **(5 Marks: Format: 1 / Content: 2 / Expression: 2)**

Section C – 31 Marks

Literature Text Book and Supplementary Reading Text

This section will have variety of assessment items including Multiple Choice Questions, Objective Type Questions, Short Answer Type Questions and Long Answer Type Questions to assess comprehension, interpretation, analysis, evaluation and extrapolation beyond the text.

10. One Poetry extract out of two, from the book **Hornbill**, to assess comprehension, interpretation, analysis, inference and appreciation. **(3x1=3 Marks)**
11. One Prose extract out of two, from the book **Hornbill**, to assess comprehension, interpretation, analysis, evaluation and appreciation. **(3x1=3 Marks)**
12. One prose extract out of two, from the book **Snapshots**, to assess comprehension, interpretation, analysis, inference and appreciation. **(4x1=4 Marks)**
13. Two Short answer type questions (one from Prose and one from Poetry, from the book **Hornbill**), out of four, to be answered in 40-50 words. Questions should elicit inferential responses through critical thinking. **(3x2=6 Marks)**
14. One Short answer type question, from the book **Snapshots**, to be answered in 40- 50 words. Questions should elicit inferential responses through critical thinking. One out of two questions to be done. **(3x1=3 Marks)**
15. One Long answer type question, from **Prose/Poetry of Hornbill**, to be answered in 120-150 words. Questions can be based on incident / theme / passage / extract / event, as reference points to assess extrapolation beyond and across the text. The question will elicit analytical and evaluative response from the student. Any one out of two questions to be done. **(1x6=6 Marks)**
16. One Long answer type question, based on the chapters from the book **Snapshots**, to be answered in 120-150 words, to assess global comprehension and extrapolation beyond the text. Questions to provide analytical and evaluative responses, using incidents, events, themes, as reference points. Any one out of two questions to be done. **(1x6=6 Marks)**

Prescribed Books

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

- The Portrait of a Lady (Prose)
- A Photograph (Poem)
- “We’re Not Afraid to Die... if We Can be Together
- Discovering Tut: the Saga Continues
- The Laburnum Top (Poem)
- The Voice of the Rain (Poem)
- Childhood (Poem)
- The Adventure
- Silk Road (Prose)
- Father to Son

2. Snapshots: Supplementary Reader published by National Council of Education Research and Training, New Delhi

- The Summer of the Beautiful White Horse (Prose)
- The Address (Prose)
- Mother’s Day (Play)
- Birth (Prose)
- The Tale of Melon City

INTERNAL ASSESSMENT

Assessment of Listening Skills - 05 marks.
Assessment of Speaking Skills – 05 Marks
Project Work - 10
Marks

Prescribed Books

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

- The Portrait of a Lady (Prose)
- A Photograph (Poem)
- “We’re Not Afraid to Die... if We Can be Together

- Discovering Tut: the Saga Continues
- The Laburnum Top (Poem)
- The Voice of the Rain (Poem)
- Childhood (Poem)
- The Adventure
- Silk Road (Prose)
- Father to Son

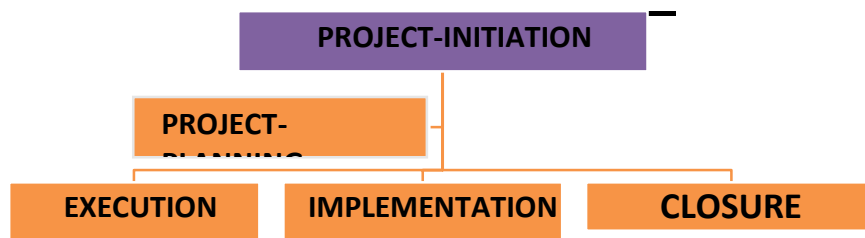
4. Snapshots: Supplementary Reader published by National Council of Education
Research and Training, New Delhi

- The Summer of the Beautiful White Horse (Prose)
- The Address (Prose)
- Mother’s Day (Play)
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| INTERNAL ASSESSMENT | |
|----------------------------------|------------|
| Assessment of Listening Skills - | 05 marks. |
| Assessment of Speaking Skills – | 05 Marks |
| Project Work | - 10 Marks |

Suggestive Timeline:

The FIVE Steps in Project Plan



| Month | Objectives |
|-------|------------|
|-------|------------|

| | |
|--|--|
| <p>Planning and Research for the Project Work</p> <p>Preferably till</p> <p>November-December</p> | <ul style="list-style-type: none"> • Teachers plan a day to orient students about the ALS projects, details are shared with all stakeholders. • Students choose a project, select team members and develop project- plan. • Group meets (preferably online) and reports to the team leader about the progress: shortfalls and successes are detailed. • Team leader apprises teacher-mentor. • Students working individually or in pairs also update the teachers. • A logical, deliverable and practical plan is drafted by the team/ pair/individual. Goals/objectives are clearly defined for all. • Work is delegated to team members by the team leader. Students wishing to work alone develop their own plan of Action. • Detailed project schedules are shared with the teacher. |
| <p>December-January</p> | <ul style="list-style-type: none"> • Suggestions and improvements are shared by the teacher, wherever necessary. • Group members coordinate and keep communication channels open for interaction. • Gaps (if any) are filled with the right skill sets by the Team Leader/ individual student. <hr/> <ul style="list-style-type: none"> • The final draft of the project portfolio/ report is prepared and submitted for evaluation. |
| <p>January-February</p> | <ul style="list-style-type: none"> • Students are assessed on their group/pair/individual presentations on allotted days. Final Viva is conducted by the External/Internal examiner. |
| <p>February-March or as per the Timelines given by the Board</p> | <ul style="list-style-type: none"> • Marks are uploaded on the CBSE website. |

**SAMPLE RUBRIC FOR ALS Project Work
(For Theatre/Role Play/Oral
presentation/Interview/Podcast)**

| CATEGORY | 1 | 2 | 3 | 4 | 5 |
|--|---|---|--|---|--|
| TIME LIMIT | Presentation is less than or more than 5 minutes long | Presentation exceeded or less than specified time limit by 4 to 5 minutes | Presentation exceeded or less than specified time limit by 3 to 4 minutes | Presentation exceeded or less than specified time limit by 2 to 3 minutes | Student/ group adhered to the given time limit |
| CONTENT/SCRIPT/QUESTIONNAIRE | Script is not related to topic or issue | Well written script/content shows little understanding of parts of topic | Well written script/content shows good understanding of parts of topic | Well written script/content shows a good understanding of subject topic | Well written script/ content shows full understanding of subject topic |
| CREATIVITY | No props/costumes/ stage presentation lack-lustre | Some work done, average stage set- up and costumes | Well organized presentation, could have improved | Logical use of props , reasonable work done, creative | Suitable props /honest effort seen/ considerable work done/ Creative and relevant costumes |
| PREPAREDNESS | Student /group seems to be unprepared | Some preparedness visible, but Rehearsal is lacking | Somewhat prepared, rehearsal is lacking | Good preparedness , but need better rehearsal | Complete preparedness/ rehearsed presentation |
| CLARITY OF SPEECH | Lack of clarity in presentation many words mispronounced | Speaks clearly, some words are mispronounced | Speaks clearly 90% of the time/ a few mispronounced words | Speaks clearly and distinctly 95% of time/ few mispronounced words | Speaks clearly distinctly 95% of time/ fluency in pronunciation |
| USE OF PROPS (Theatre/Role Play) | Only 1/no relevant props used | 1 to 2 relevant props used | 2 to 3 relevant props used | 3 to 4 relevant props used | 4 to 5 relevant props used |
| EXPRESSION/ BODY LANGUAGE | Very little use of facial expressions/ body language, does not generate much interest | Little Use of facial expressions and body language | Facial expressions and body language are used to try to generate some enthusiasm | Facial expression and body language sometimes generate strong enthusiasm with the topic | Facial expression and body language generate strong enthusiasm with the topic |
| PORTFOLIO-PRESENTATION | Inadequate & unimpressive | Somewhat suitable & convincing | Adequate & relevant | Interesting, enjoyable & relevant | Brilliant, creative & exceptional |

Class XI - Maths(2023-2024)

Ist Term **(April - September)**

| | |
|------------------|---|
| April | 1. Trigonometry |
| May | 1. Sets 2. Relations and functions |
| July | 1. Complex numbers 2. Sequence and Series |
| August | 1. Binomial Theorem 2. Permutations & Combinations |
| September | 1. Linear Inequalities |

2nd Term **(October – February)**

| | |
|-----------------|--|
| October | 1. Straight Lines 2. Conic sections |
| November | 1. Three Dimensional Geometry 2. Limits and Derivatives |
| December | 1. Probability 2. Statistics |
| January | |
| February | Revision |

Class XI - PHYSICS (2023-2024)

Ist Term **(April - September)**

| | |
|---------------|--|
| APRIL: | <ul style="list-style-type: none">• Introduction to vectors• Integration and differentiation |
| MAY: | KINEMATICS (motion in a straight line Projectile motion) Equations of motion, graphical representation of motion and interpretation |
| JULY: | LAWS OF MOTION Newton's Laws , Force of friction and coefficient of friction, motion on inclined plane WORK, ENERGY AND POWER <ul style="list-style-type: none">• Type of mechanical energy, conservation of energy,type of collision and velocities of bodies after Elastic collision |
| AUGUST | GRAVITATION Newton's law of Gravitation , acceleration due to gravity, variation in g due to height and depth, escape velocity and orbital velocity of a satellite. |

| | |
|-------------------|---|
| SEPTEMBER: | CENTRE OF MASS AND ROTATIONAL MOTION Centre of mass for 2 particle system, moment of inertia, conservation of angular momentum and its applications |
| | Revision |

2nd Term

(October – February)

| | |
|------------------|---|
| OCTOBER | PROPERTIES OF SOLIDS AND FLUIDS Elasticity, Graphical representation, coefficient of elasticity, viscosity and stoke's theorem, terminal velocity and type of flow of liquids |
| NOVEMBER: | HEAT AND THERMODYNAMIC Heat energy, flow of heat, various Thermodynamic process, first and Second law of Thermodynamic. |
| | KINETIC THEORY OF GASES Various gas laws, pressure of an ideal Gas , assumptions in Kinetic theory of gases |
| DECEMBER: | OSCILLATIONS SHM and its characteristics ,equation of SHM, Energy of body showing SHM |
| JANUARY: | WAVES Equation of a Waves, progressive and standing Waves, formation of beats , nodes in an organic pipe. |
| FEBRUARY | REVISION and ANNUAL EXAM |

Chemistry(2023-2024)

Ist Term

(April - September)

| | | |
|----------------------|-----------------|---|
| April/May | Unit I | Some Basic Concepts of Chemistry The topics in this unit are: General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry |
| July / August | Unit II | Structure of Atom The topics in this unit are: Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals |
| August | Unit III | Classification of Elements and Periodicity in Properties The topics in this unit are: |

Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.

September Revision
Half Yearly Examination

2nd Term

(October – February)

October **Unit IV** Chemical Bonding and Molecular Structure

The topics in this unit are:

Valence electrons, ionic bond, covalent bond, bond parameters, Lewis's structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homo nuclear diatomic molecules (qualitative idea only), Hydrogen bond

November **Unit XII** Organic Chemistry -Some Basic Principles and Techniques General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.

Unit XIII Hydrocarbons

Classification of Hydrocarbons Aliphatic Hydrocarbons: Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. Alkenes - Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water

Aromatic Hydrocarbons: Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of the functional group in monosubstituted benzene. Carcinogenicity and toxicity.

December **Unit VIII** Redox Reactions

The topics in this unit are:

Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

January **Unit VI** Chemical Thermodynamics

The topics in this unit are:

Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics -internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH , Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy

change for spontaneous and non-spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction).

Unit VII Equilibrium

The topics in this unit are:

Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples).

Practical (Projects, experiments, small studies, etc.) 30 marks

February Revision
Annual Examination

BIOLOGY

Botany(2023-2024)

Ist Term

(April - September)

| | |
|------------------|---|
| April | Chapter 1. The living world. Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; Binomial nomenclature. |
| May | Chapter 5. Morphology of flowering plants. Morphology of different parts of flowering plants; root, stem, leaf, inflorescence, flower, fruit and seed. Description of family Solanaceae. |
| July | Chapter 2. Biological classification. Five kingdom classification; salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids. |
| August | Chapter 3. Plant Kingdom. Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta and Gymnosperms. Revision. |
| September | First terminal Examination |

2nd Term

(October – February)

| | |
|-----------------|---|
| October | Chapter 6. Anatomy of Flowering plants. Anatomy and functions of tissue systems in dicots and monocots. Chapter 10. Cell cycle and Cell division. Cell cycle, mitosis, meiosis and their significance. |
| November | Chapter 13. Photosynthesis in Higher plants. Photosynthesis as a means of autotrophic nutrition, site of photosynthesis, pigments |

involved in photosynthesis; photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.

December

Chapter 14. Respiration in plants.

Exchange of gases; cellular respiration-glycolysis, fermentation(anaerobic),TCA cycle and electron transport system(aerobic); energy relations-number of ATP molecules generated; amphibolic pathways; respiratory quotient.

Chapter 15. Plant- Growth and development.

Seed germination, phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation, and redifferentiation; sequence of developmental processes in a plant cell; plant growth regulators- auxins, gibberellin, cytokinin, ethylene and ABA.

January

Revision.

February

Annual Examination

Zoology(2023-2024)

Ist Term

(April - September)

July

1. ANIMAL KINGDOM

- Salient features and classification of animals,
- non-chordates up to phyla level and chordates up to class level (salient features and a few examples of each category).

2. STRUCTURAL ORGANISATION IN ANIMALS

(Anatomy & functions of different systems of frog)

- Morphology,
- Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog

August

3. CELL: THE UNIT OF LIFE

- Cell theory and cell as the basic unit of life
- structure of prokaryotic and eukaryotic cells
- Plant cell and animal cell
- cell envelope; cell membrane, cell wall
- cell organelles - structure and function
- endomembrane system
- endoplasmic reticulum
- golgi bodies
- lysosomes
- vacuoles
- mitochondria
- ribosomes
- plastids
- microbodies
- cytoskeleton
- cilia, flagella
- centrioles (ultrastructure and function)

- nucleus

**August /
September**

5. BREATHING AND EXCHANGE OF GASES

- Respiratory organs in animals (recall only)
- Respiratory system in humans
- mechanism of breathing and its regulation in humans
- exchange of gases
- transport of gases
- regulation of respiration respiratory volume
- disorders related to respiration - asthma, emphysema, occupational respiratory disorder

September

REVISION HALF YEARLY EXAMINATION

2nd Term

(October – February)

October

5 .BODY FLUIDS AND CIRCULATION

- Composition of blood
- blood groups
- coagulation of blood
- composition of lymph and its function
- human circulatory system - Structure of human heart and blood vessels
- cardiac cycle, cardiac output
- ECG; double circulation
- regulation of cardiac activity
- disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure

5. EXCRETORY PRODUCTS AND THEIR ELIMINATION

- Modes of excretion - ammonotelism, ureotelism, uricotelism
- human excretory system – structure and function;
- urine formation
- osmoregulation
- regulation of kidney function - renin - angiotensin, atrial natriuretic factor
- ADH and diabetes insipidus
- role of other organs in excretion
- disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney
- kidney transplant.

November

3. BIOMOLECULES

- Chemical constituents of living cells
- biomolecules, structure and function of proteins carbohydrates, lipids, nucleic acids
- Enzyme - types, properties
- enzyme action.

**November/
December**

5. LOCOMOTION AND MOVEMENT

- Types of movement - ciliary, flagellar, muscular;

- skeletal muscle
- contractile proteins and muscle contraction
- skeletal system and its functions
- joints
- disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

December

5. NEURAL CONTROL AND COORDINATION

- Neuron and nerves
- Nervous system in humans
- central nervous system;
- peripheral nervous system
- visceral nervous system
- generation and conduction of nerve impulse

January

5. CHEMICAL COORDINATION AND INTEGRATION

- Endocrine glands and hormones
- human endocrine system - hypothalamus
- pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads
- mechanism of hormone action (elementary idea)
- role of hormones as messengers and regulators
- hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goitre, diabetes, Addison's disease.

Revision

February

Annual Examination

XI - COMPUTER SCIENCE (2023-24)

Ist Term

(April - September)

April

Unit I: Computer Systems and Organisation

- **Basic Computer Organisation:** Introduction to computer system, hardware, software, input device, output device, CPU, memory (primary, cache and secondary), units of memory (Bit, Byte, KB, MB, GB, TB, PB)
- **Types of software:** system software (operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler & interpreter), application software
- **Operating system (OS):** functions of operating system, OS user interface
- **Boolean logic:** NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's laws and logic circuits

May

- **Number system:** Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems.
- **Encoding schemes:** ASCII, ISCII and UNICODE (UTF8, UTF32)

Unit II: Computational Thinking and Programming - 1

- **Introduction to problem solving:** Steps for problem solving (analysing the problem, developing an algorithm, coding, testing and debugging). Representation of algorithms using flow chart and pseudo code, decomposition
- **Familiarization with the basics of Python programming:** Introduction to Python, features of Python, executing a simple "hello world" program, execution modes:

interactive mode and script mode, Python character set, Python tokens (keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r-value, use of comments

- **Knowledge of data types:** number (integer, floating point, complex), boolean, sequence (string, list, tuple), none, mapping (dictionary), mutable and immutable data types

*** Detailed Home Assignment & Art Integrated Project Work for Summer Break

July **Unit II: Computational Thinking and Programming - 1**

- **Operators:** arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators(is, is not), membership operators(in, not in)
- **Expressions, statement, type conversion & input/output:** precedence of operators, expression, evaluation of expression, python statement, type conversion (explicit & implicit conversion), accepting data as input from the console and displaying output
- **Errors:** syntax errors, logical errors, runtime errors

August

- **Flow of control:** introduction, use of indentation, sequential flow, conditional and iterative flow control
- **Conditional statements:** if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number
- **Iterative statements:** for loop, range function, while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number etc
- **Strings:** introduction, indexing, string operations (concatenation, repetition, membership & slicing), traversing a string using loops, built-in functions: len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(), rstrip(), strip(), replace(), join(), partition(), split()

September **Revision**

2nd Term

(October – February)

October

- **Lists:** introduction, indexing, list operations (concatenation, repetition, membership & slicing), traversing a list using loops, built-in functions: len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists, suggested programs: finding the maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list

November

- **Tuples:** introduction, indexing, tuple operations (concatenation, repetition, membership & slicing), built-in functions: len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple, suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple
- **Dictionary:** introduction, accessing items in a dictionary using keys, mutability of dictionary (adding a new item, modifying an existing item), traversing a dictionary, built-in functions: len(), dict(), keys(), values(), items(), get(), update(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), count(), sorted(), copy(); suggested programs : count the number of times a character appears in a given

string using a dictionary, create a dictionary with names of employees, their salary and access them

December

- **Introduction to Python modules:** Importing module using 'import ' and using from statement, Importing math module (pi, e,sqrt, ceil, floor, pow, fabs, sin, cos, tan); random module (random, randint, randrange), statistics module (mean, median, mode)

*** Detailed Home Assignment & Project Work in Python for Winter Break

January

Unit III: Society, Law and Ethics

- Digital Footprints
- Digital society and Netizen: net etiquettes, communication etiquettes, social media etiquettes
- Data protection: Intellectual Property Right (copyright, patent, trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement), open source softwares and licensing (Creative Commons, GPL and Apache)
- Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime
- Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying.
- Safely accessing web sites: malware, viruses, Trojans, adware
- E-waste management: proper disposal of used electronic gadgets
- Indian Information Technology Act (IT Act)
- Technology & Society: Gender and disability issues while teaching and using computers

February

Revision

Class XI - Psychology(2023 – 2024)

One Theory Paper Marks: 70

| Units | Topics | Marks |
|-------|---|-----------|
| I | What is Psychology? | 11 |
| II | Methods of Enquiry in Psychology | 13 |
| IV | Human Development | 11 |
| V | Sensory, Attentional and Perceptual Processes | 8 |
| VI | Learning | 9 |
| VII | Human Memory | 8 |
| VIII | Thinking | 5 |
| IX | Motivation and Emotion | 5 |
| | TOTAL | 70 |

COURSE STRUCTURE

| | | |
|------------------|-----------------|--|
| April/May | Unit I | <p>What is Psychology? The topics in this unit are:</p> <ol style="list-style-type: none"> 1. Introduction 2. What is Psychology? <ul style="list-style-type: none"> • Psychology as a Discipline • Psychology as a Natural Science • Psychology as a Social Science 3. Understanding Mind and Behaviour 4. Popular Notions about the Discipline of Psychology 5. Evolution of Psychology 6. Development of Psychology in India 7. Branches of Psychology 8. Psychology and Other Disciplines 9. Psychology in Everyday Life |
| July | Unit VII | <p>Human Memory</p> <p>The topics in this unit are:</p> <ol style="list-style-type: none"> 1. Introduction 2. Nature of memory 3. Information Processing Approach : The Stage Model 4. Memory Systems : Sensory, Short-term and Longterm Memories 5. Levels of Processing 6. Types of Long-term Memory <ul style="list-style-type: none"> • Declarative and Procedural; Episodic and Semantic 7. Nature and Causes of Forgetting |
| August | Unit II | <p>Methods of Enquiry in Psychology</p> <p>The topics in this unit are:</p> <ol style="list-style-type: none"> 1. Introduction 2. Goals of Psychological Enquiry <ul style="list-style-type: none"> • Steps in Conducting Scientific Research • Alternative Paradigms of Research 3. Nature of Psychological Data 4. Some Important Methods in Psychology <ul style="list-style-type: none"> • Observational Method • Experimental Method • Correlational Research • Survey Research • Psychological Testing • Case Study 5. Analysis of Data <ul style="list-style-type: none"> • Quantitative Method • Qualitative Method 6. Limitations of Psychological Enquiry 7. Ethical Issues |
| September | Unit IV | <p>Human Development</p> |

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| | | <p>The topics in this unit are:</p> <ol style="list-style-type: none"> 1. Introduction 2. Meaning of Development • Life-Span Perspective on Development 3. Factors Influencing Development 4. Context of Development 5. Overview of Developmental Stages • Prenatal Stage • Infancy • Childhood • Challenges of Adolescence • Adulthood and Old Age |
| October | Unit V | <p>Sensory, Attentional and Perceptual Processes</p> <p>The topics in this unit are:</p> <ol style="list-style-type: none"> 1. Introduction 2. Knowing the world 3. Nature and varieties of Stimulus 4. Sense Modalities • Functional limitation of sense organs 5. Attentional Processes • Selective Attention • Sustained Attention 6. Perceptual Processes • Processing Approaches in Perception 7. The Perceiver 8. Principles of Perceptual Organisation 9. Perception of Space, Depth and Distance • Monocular Cues and Binocular Cues 1 0. Perceptual Constancies 11. Illusions 12. Socio-Cultural Influences on Perception |
| November | Unit VI | <p>Learning</p> <p>The topics in this unit are:</p> <ol style="list-style-type: none"> 1. Introduction 2. Nature of Learning 3. Paradigms of Learning 4. Classical Conditioning • Determinants of Classical Conditioning 5. Operant/Instrumental Conditioning • Determinants of Operant Conditioning • Key Learning Processes 6. Observational Learning 7. Cognitive Learning 8. Verbal Learning 9. Skill Learning 10. Factors Facilitating Learning 11. Learning Disabilities |
| December | Unit VIII | Thinking |

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| | | <p>The topics in this unit are:</p> <ol style="list-style-type: none"> 1. Introduction 2. Nature of Thinking <ul style="list-style-type: none"> • Building Blocks of Thought 3. The Processes of Thinking 4. Problem Solving 5. Reasoning 6. Decision-making 7. Nature and Process of Creative Thinking <ul style="list-style-type: none"> • Nature of Creative Thinking • Process of Creative Thinking 8. Thought and Language 9. Development of Language and Language Use |
| January | Unit IX | <p>Motivation and Emotion</p> <p>The topics in this unit are:</p> <ol style="list-style-type: none"> 1. Introduction 2. Nature of Motivation 3. Types of Motives <ul style="list-style-type: none"> • Biological Motives • Psychosocial Motives 4. Maslow’s Hierarchy of Needs 5. Nature of Emotions 6. Expression of Emotions <ul style="list-style-type: none"> • Culture and Emotional Expression • Culture and Emotional Labelling 7. Managing Negative Emotions 8. Enhancing Positive Emotions |
| | | Practical (Projects, experiments, small studies, etc.) 30 marks |

Class XI - Economics(2023-2024)

| Ist Term | (April - September) |
|--------------|---|
| April | <p>Unit 1 : Introduction</p> <p>What is Economics?</p> <p>Meaning, scope, functions and importance of statistics in Economics</p> |
| May | <p>Unit 2: Collection, Organisation and Presentation of data.</p> <p>Collection of Data</p> <p>Sources of data - primary and secondary; how basic data is collected with concepts of Sampling; methods of collecting data; some important sources of secondary data: Census of India and National Sample Survey Organisation.</p> |
| July | <p>Organisation of Data: Meaning and types of variables; Frequency Distribution.</p> <p>Presentation of Data: Tabular Presentation and Diagrammatic Presentation of Data : Geometric forms (bar diagrams and pie diagrams), (ii) Frequency diagrams(histogram, polygon and Ogive) and (iii) Arithmetic line graphs (time series graph).</p> |

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| August | <p>Unit 3: Statistical Tools and Interpretation For all the numerical problems and solutions, the appropriate economic interpretation may be attempted. This means, the students need to solve the problems and provide interpretation for the results derived.</p> <p>Measures of Central Tendency- Arithmetic mean, median and mode</p> |
| September | <p>Correlation – meaning and properties, scatter diagram; Measures of correlation - Karl Pearson's method (two variables ungrouped data) Spearman's rank correlation (Non-Repeated Ranks and Repeated Ranks).</p> |
| <hr/> | |
| 2nd Term | (October – February) |
| October/ November | <p>Introduction to Index Numbers - meaning, types - wholesale price index, consumer price index and index of industrial production, uses of index numbers; Inflation and index numbers Simple Aggregative Method.</p> <p>Part B: Introductory Microeconomics</p> |
| May | <p>Unit 4: Introduction Meaning of microeconomics and macroeconomics; positive and normative economics</p> |
| July | <p>What is an economy? Central problems of an economy: what, how and for whom to produce; concepts of production possibility frontier and opportunity cost.</p> |
| August | <p>Unit 5: Consumer's Equilibrium and Demand Consumer's equilibrium - meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis.</p> |
| October | <p>Indifference curve analysis of consumer's equilibrium-the consumer's budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer's equilibrium.</p> |
| November | <p>Demand, market demand, determinants of demand, demand schedule, demand curve and its slope, movement along and shifts in the demand curve; price elasticity of demand – factors affecting price elasticity of demand; measurement of price elasticity of demand – percentage change method and total expenditure method.</p> |
| December | <p>Unit 6: Producer Behaviour and Supply Meaning of Production Function – Short-Run and Long-Run Total Product, Average Product And Marginal Product.</p> |
| January | <p>Returns to a Factor Cost: Short run costs - total cost, total fixed cost, total variable cost; Average cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationships.</p> <p>Revenue - total, average and marginal revenue - meaning and their relationship. Producer's equilibrium-meaning and its conditions in terms of marginal revenue-marginal cost. Supply, market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply - percentage-change method.</p> |

February

Unit 7: Forms of Market and Price Determination under Perfect Competition with simple applications.

Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply.

Simple Applications of Demand and Supply: Price ceiling, price floor.

Revision

Part C: Project in Economics 20 Marks

Class XI - Physical Education(2023-2024)

Ist Term

(April - September)

April UNIT 1 - Changing Trends & Career in Physical Education

- Concept , Aims & Objectives of Physical Education
- Development of Physical Education in India – Post Independence
- Changing Trends in Sports - Playing surface , wearable gear and sports equipment, technological advancement
- Career Options in Physical Education
- Khelo - India and Fit - India Program

May UNIT 2- Olympism Value Education

- Olympism – Concept and Olympics Values (Excellence, Friendship & Respect)
- Olympic Value Education – Joy of Effort, Fair Play, Respect for Others, Pursuit of Excellence, Balance Among Body, Will & Mind
- Ancient and Modern Olympics
- Olympics - Symbols , Motto , Flag , Oath and Anthem
- Olympics Movement Structure - IOC, NOC, IFS, Other members

July UNIT 3 – Yoga

- Meaning & Importance of Yoga
- Introduction to Ashtang Yoga
- Introduction to Yogic Kriyas (Shat Karma)
- Pranayama and its types.
- Active Lifestyle and stress management through Yoga

August UNIT 4 - Physical Education And Sports For CWSN (Children With Special Need- Divyang)

- Concept of Disability and Disorder
- Types of Disability, Its Causes and Nature (Intellectual Disability, Physical Disability)
- Disability Etiquette
- Aim and Objective of Adaptive Physical Education
- Role of Various Professionals for Children with Special Need. (Counsellor, Occupational Therapist), Physiotherapist, Physical Education Teacher, Speech Therapist & Special Educator)

September UNIT 5 - Physical Fitness, Wellness and Lifestyle

- Meaning and Importance of Wellness, Health and Physical Fitness
- Components/Dimensions of Wellness, Health and Physical Fitness
- Traditional Sports & Regional Games for promoting wellness

- Leadership through Physical Activity and Sports
- Introduction to First Aid – PRICE

2nd Term

(October – February)

October

UNIT 6 - Test, Measurement & Evaluation

- Define Test, Measurements and Evaluation.
- Importance of Test, Measurements and Evaluation in Sports.
- Calculation of BMI, Waist – Hip Ratio, Skin fold measurement (3-site)
- Somato Types (Endomorphy, Mesomorphy & Ectomorphy)
- Measurements of health-related fitness

UNIT 7 - Fundamentals of Anatomy, Physiology in Sports

- Definition and Importance of Anatomy and Physiology in exercise and sports
- Functions of Skeletal system, classification of bone and types of joints
- Properties and Functions of Muscles.
- Structure and Functions of Circulatory system and Heart.
- Structure and Functions of Respiratory system.

November

UNIT 8- Fundamentals of Kinesiology and Biomechanics in Sports

- Definition and Importance of Kinesiology and Biomechanics in sports
- Principles of Biomechanics
- Kinetics and Kinematics in Sports
- Types of Body Movements- Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation
- Axis and Planes - Concept and its application in body movements

December

UNIT 9 - Psychology & Sports

- Definition & Importance of Psychology in Physical Education & Sports
- Developmental Characteristics at Different Stages of Development
- Adolescent Problems & Their Management
- Team Cohesion and Sports
- Introduction to Psychological Attributes: Attention, Resilience, Mental Toughness

January

UNIT 10 - Training and Doping in Sports

- Concept and Principles of Sports Training
- Training Load; Over Load, Adaptation, and Recovery
- Warming-up & Limbering Down –Types, Method & Importance
- Concept of Skill, Technique, Tactics & Strategies
- Concept of Doping and its Disadvantages

February

Revision and Annual Exam