Class : XII , Term : 1 Syllabus , 2025-2026

Stream : Science

Subject : English core

FLAMINGO

PROSE

1. THE LAST LESSON
2. LOST SPRING
3. DEEP WATER
4. THE RATTRAP
5. THE INTERVIEW

POETRY

1. MY MOTHER AT SIXTY-SIX
2. KEEPING QUIET
3. A THING OF BEAUTY

VISTAS

1. THE THIRD LEVEL
2. THE TIGER KING
3. THE ENEMY
4. ON THE FACE OF IT
5. MEMORIES OF CHILDHOOD

WRITING SKILLS

1. NOTICE
2. INVITATION AND REPLY
3. JOB APPLICATION
4. EDITORIAL LETTER

COMPREHENSION

Subject : Physics

Unit–I Electrostatics	Chapter–1: Electric Charges and Fields Chapter–2: Electrostatic Potential and Capacitance
Unit-II Current Electricity	Chapter–3: Current Electricity
Unit–III Magnetic Effects of Current and Magnetism	Chapter–4: Moving Charges and Magnetism Chapter–5: Magnetism and Matter
Unit–IV Electromagnetic Induction and Alternating Currents	Chapter–6: Electromagnetic Induction Chapter–7: Alternating Current
Unit–V Electromagnetic Waves	Chapter–8: Electromagnetic Waves

Subject : Chemistry

- Solutions and Colligative property
- Chemical Kinetics
- Haloalkanes and Haloarenes
- Coordination Chemistry
- d and f block elements
- Alcohols , phenol and Ethers

Subject : Maths

Unit-I: Relations and Functions

1. Relations and Functions

Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.

2. Inverse Trigonometric Functions

Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions.

Unit-II: Algebra

1. Matrices

Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operations on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non- commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

2. Determinants

Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

Unit-III: Calculus

1. Continuity and Differentiability

Continuity and differentiability, chain rule, derivative of composite functions, derivatives of inverse trigonometric functions like $\sin^{-1} x$, $\cos^{-1} x$ and $\tan^{-1} x$, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

2. Applications of Derivatives

Applications of derivatives: rate of change of quantities, increasing/decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real- life situations).

3. Integrals

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}},$$

Unit-IV: Vectors and Three-dimensional Geometry

1. Vectors

Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors.

Unit-V: Linear Programming Problem

1. Linear Programming

Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

Subject : Biology

CH-1 : SEXUAL REPRODUCTION IN FLOWERING PLANTS

CH-2 : HUMAN REPRODUCTION

CH-3 : REPRODUCTIVE HEALTH

CH-4 : PRINCIPLES OF INHERITANCE AND VARIATION

CH-5 : MOLECULAR BASIS OF INHERITANCE

Subject : Physical Education

Unit I Management of Sporting Events

1. Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling)
2. Various Committees & their Responsibilities (pre; during & post)
3. Fixtures and their Procedures – Knock-Out (Bye & Seeding) & League (Staircase, Cyclic, Tabular method) and Combination tournaments.
4. Intramural & Extramural tournaments – Meaning, Objectives & Its Significance
5. Community sports program (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity)

Unit II Children & Women in Sports

1. Exercise guidelines of WHO for different age groups.
2. Common postural deformities-knock knees, flat foot, round shoulders, Lordosis, Kyphosis, Scoliosis, and bow legs and their respective corrective measures.
3. Women's participation in Sports – Physical, Psychological, and social benefits.
4. Special consideration (menarche and menstrual dysfunction)
5. Female athlete triad (osteoporosis, amenorrhea, eating disorders).

Unit III Yoga as Preventive measure for Lifestyle Disease

1. **Obesity:** Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama.
2. **Diabetes:** Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana,Bhujang asana, Shalabhasana, Dhanurasana, Suptavajarasana, Paschimottanasan -a, Ardha -Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati.
3. **Asthma:** Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, UttanMandukasana, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, Gomukhasana Matsyaasana, Anuloma-Viloma.
4. **Hypertension:** Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana, UttanMandukasan-a, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadi-Shodhana pranayama.

Unit IV Physical Education and Sports for CWSN (Children with Special Needs - Divyang)

1. Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics)
2. Concept of Classification and Divisioning in Sports.
3. Concept of Inclusion in sports, its need, and Implementation;
4. Advantages of Physical Activities for children with special needs.
5. Strategies to make Physical Activities assessable for children with special needs.

Unit V Sports & Nutrition

1. Concept of balanced diet and nutrition
2. Macro and Micro Nutrients: Food sources & functions
3. Nutritive & Non-Nutritive Components of Diet
4. Eating for Weight control– A Healthy Weight, The Pitfalls of Dieting, Food Intolerance, and Food Myths
5. Importance of Diet in Sports-Pre, During and Post competition Requirements

Unit VI Test & Measurement in Sports

1. Fitness Test – SAI Khelo India Fitness Test in school:
    i. Age group 5-8 years/ class 1-3: BMI, Flamingo Balance Test, Plate Tapping Test
    ii. Age group 9-18yrs/ class 4-12: BMI, 50mt Speed test, 600mt Run/Walk, Sit & Reach flexibility test, Strength Test (Partial Abdominal Curl Up, Push-Ups for boys, Modified Push-Ups for girls).
2. Measurement of Cardio-Vascular Fitness: – Harvard Step Test – Duration of the Exercise in Seconds x100/5.5 X Pulse count of 1-1.5 Min after Exercise.
3. Computing Basal Metabolic Rate (BMR)
4. Rikli & Jones - Senior Citizen Fitness Test
    i. Chair Stand Test for lower body strength
    ii. Arm Curl Test for upper body strength
    iii. Chair Sit & Reach Test for lower body flexibility
    iv. Back Scratch Test for upper body flexibility
    v. Eight Foot Up & Go Test for agility
    vi. Six-Minute Walk Test for Aerobic Endurance
5. Johnson – Methney Test of Motor Educability (Front Roll, Roll, Jumping Half-Turn, Jumping full-turn)

Subject : Computer Science

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 (global scope, local scope).
- Exception Handling: Introduction, handling exceptions using try-except-finally blocks.
- Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths .
- 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 writer( ),writerow( ),writerows() and read from a csv file using reader( ).
- Data Structure: Stack, operations on stack (push & pop), implementation of stack using list.

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.

Subject : Bengali

PROSE: KE BACHAY KE BACHE, BHARAT BARSHO

POEM: RUPNARANER KULE, AAMI DEKHI, KRANDANRATA JANANIR PASHE

SUPPLYMENTARY : GARO PAHARER NICHE, CHATIR BADOLE HATI

GRAMMAR : APINIHITI, AVISHRUTI, SWARASONGOTI, UTKARSHO

WRITTING : REPORT WRITING, ADVERTISMENT WRITING

Subject : Psychology

SL NO	Chapter Name
1.	Meeting Life Challenges (From Sources of stress)
2.	Psychological Disorders
3.	Therapeutic Approaches
4.	Attitudes and Social Cognition

PRACTICALS

1. On intelligence- Raven's Progressive Matrices (RPM)
2. On personality- 16 Personality Factors (16PF)
3. On personality- Kundu's Neurotic Personality Inventory (KNPI)
4. On anxiety- Sinha's Comprehensive Anxiety Test (SCAT)
5. On Adjustment- Adjustment Inventory for School students (AISS)