**CLASS XII (2025-26)**

**PHYSICS (THEORY)**

**Time: 3 hrs.** **Max Marks: 70**

| UNIT | CHAPTERS | MARKS |
|---|---|---|
| **Unit–I** | **Electrostatics** | |
| | Chapter–1: Electric Charges and Fields | |
| | Chapter–2: Electrostatic Potential and Capacitance | **16** |
| **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 | **17** |
| **Unit-IV** | **Electromagnetic Induction and Alternating Currents** | |
| | Chapter–6: Electromagnetic Induction | |
| | Chapter–7: Alternating Current | |
| **Unit–V** | **Electromagnetic Waves** | |
| | Chapter–8: Electromagnetic Waves | |
| **Unit–VI** | **Optics** | **18** |
| | Chapter–9: Ray Optics and Optical Instruments | |
| | Chapter–10: Wave Optics | |
| **Unit–VII** | **Dual Nature of Radiation and Matter** | |
| | Chapter–11: Dual Nature of Radiation and Matter | |
| **Unit–VIII** | **Atoms and Nuclei** | **12** |
| | Chapter–12: Atoms | |
| | Chapter–13: Nuclei | |
| **Unit–IX** | **Electronic Devices** | |
| | Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits | **7** |
| **Total** | | **70** |

## Unit I: Electrostatics

### Chapter–1: Electric Charges and Fields

Electric charges, Conservation of charge, Coulomb's law-force between two- point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field.

Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

### Chapter–2: Electrostatic Potential and Capacitance

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two-point charges and of electric dipole in an electrostatic field.

Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor (no derivation, formulae only).

## Unit II: Current Electricity

### Chapter–3: Current Electricity

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, temperature dependence of resistance, Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's rules, Wheatstone bridge.

## Unit III: Magnetic Effects of Current and Magnetism

### Chapter–4: Moving Charges and Magnetism

Concept of magnetic field, Oersted's experiment.

Biot - Savart law and its application to current carrying circular loop.

Ampere's law and its applications to infinitely long straight wire. Straight solenoid (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields.

Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; Current loop as a magnetic dipole and its magnetic dipole moment, moving coil galvanometer- its current sensitivity and conversion to ammeter and voltmeter.

### Chapter–5: Magnetism and Matter

Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines.

Magnetic properties of materials- Para-, dia- and ferro – magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties.

## Unit IV: Electromagnetic Induction and Alternating Currents

### Chapter–6: Electromagnetic Induction

Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction.

### Chapter–7: Alternating Current

Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LCR series circuit (phasors only), resonance, power in AC circuits, power factor, wattless current. AC generator, Transformer.

## Unit V: Electromagnetic waves

### Chapter–8: Electromagnetic Waves

Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only).

Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

## Unit VI: Optics

### Chapter–9: Ray Optics and Optical Instruments

**Ray Optics:** Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism.

Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.

### Chapter–10: Wave Optics

**Wave optics:** Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima (qualitative treatment only).

## Unit VII: Dual Nature of Radiation and Matter

### Chapter–11: Dual Nature of Radiation and Matter

Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light.
Experimental study of photoelectric effect
Matter waves-wave nature of particles, de-Broglie relation.

## Unit VIII: Atoms and Nuclei

### Chapter–12: Atoms

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in nth orbit, hydrogen line spectra (qualitative treatment only).

### Chapter–13: Nuclei

Composition and size of nucleus, nuclear force

Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.

## Unit IX: Electronic Devices

### Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits

Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction

Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier.

## PRACTICALS

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.
- The Report of the project carried out by the students.

### Evaluation Scheme

**Max. Marks: 30** **Time 3 hours**

| | |
|---|---|
| Two experiments one from each section | 7+7 Marks |
| Practical record [experiments and activities] | 5 Marks |
| One activity from any section | 3 Marks |
| Investigatory Project | 3 Marks |
| Viva on experiments, activities and project | 5 Marks |
| **Total** | **30 marks** |

**Experiments** **SECTION–A**

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.

**OR**

To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.

6. To find the frequency of AC mains with a sonometer.

**Activities**

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.
5. To study the variation in potential drop with length of a wire for a steady current.
6. 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 find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
6. To determine refractive index of a glass slab using a travelling microscope.
7. To find the refractive index of a liquid using convex lens and plane mirror.
8. To find the refractive index of a liquid using a concave mirror and a plane mirror.
9. 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 study effect of intensity of light (by varying distance of the source) on an LDR.
4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
5. To observe diffraction of light due to a thin slit.
6. To study the nature and size of the image formed by a (i) convex lens, or (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
7. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

**Suggested Investigatory Projects**

1. To study various factors on which the internal resistance/EMF of a cell depends.
2. To study the variations in current flowing in a circuit containing an LDR because of a variation in
   (a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance).
   (b) the distance of an incandescent lamp (of fixed power) used to 'illuminate' the LDR.
3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equiconvex lens (made from a glass of known refractive index) and an adjustable object needle.
4. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.
5. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.
6. To estimate the charge induced on each one of the two identical Styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.
7. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.
8. To study the earth's magnetic field using a compass needle -bar magnet by plotting magnetic field lines and tangent galvanometer.

## Class XII

### A. Items for Identification/ familiarity with the apparatus for assessment in practicals (All experiments)

Meter scale, general shape of the voltmeter/ammeter, battery/power supply, connecting wires, standard resistances, connecting wires, voltmeter/ammeter, meter bridge, screw gauge, jockey Galvanometer, Resistance Box, standard Resistance, connecting wires, Potentiometer, jockey, Galvanometer, Lechlanche cell, Daniell cell [simple distinction between the two vis-à-vis their outer (glass and copper) containers], rheostat connecting wires, Galvanometer, resistance box, Plug-in and tapping keys, connecting wires battery/power supply, Diode, Resistor (Wire-wound or carbon ones with two wires connected to two ends), capacitors (one or two types), Inductors, Simple electric/electronic bell, battery/power supply, Plug- in and tapping keys, Convex lens, concave lens, convex mirror, concave mirror, Core/hollow wooden cylinder, insulated wire, ferromagnetic rod, Transformer core, insulated wire.

### B. List of Practicals

1. To determine the resistance per cm of a given wire by plotting a graph between voltage and current.
2. To verify the laws of combination (series/parallel combination) of resistances by Ohm's law.
3. To find the resistance of a given wire / standard resistor using a meter bridge.
4. To determine the resistance of a galvanometer by half deflection method.
5. To identify a resistor, capacitor, inductor and diode from a mixed collection of such items.
6. To observe the difference between
   (i) a convex lens and a concave lens
   (ii) a convex mirror and a concave mirror and to estimate the likely difference between the power of two given convex /concave lenses.
7. To design an inductor coil and to know the effect of
   (i) change in the number of turns
   (ii) Introduction of ferromagnetic material as its core material on the inductance of the coil.
8. To design a (i) step up (ii) step down transformer on a given core and know the relation between its input and output voltages.

**Note**: The above practicals may be carried out in an experiential manner rather than recording observations.

**Prescribed Books:**

1. Physics, Class XI, Part -I and II, Published by NCERT.
2. Physics, Class XII, Part -I and II, Published by NCERT.
3. Laboratory Manual of Physics for class XII Published by NCERT.
4. The list of other related books and manuals brought out by NCERT (consider multimedia also).

**Note**:

**The content indicated in NCERT textbooks as excluded for the year 2025-26 is not to be tested by schools and will not be assessed in the Board examinations 2025-26.**

## COURSE STRUCTURE
## CLASS XII
## THEORY

**Time: 3 Hours** **Total Marks: 70**

| S. No. | Title | Marks |
|---|---|---|
| 1 | Solutions | 7 |
| 2 | Electrochemistry | 9 |
| 3 | Chemical Kinetics | 7 |
| 4 | d -and f -Block Elements | 7 |
| 5 | Coordination Compounds | 7 |
| 6 | Haloalkanes and Haloarenes | 6 |
| 7 | Alcohols, Phenols and Ethers | 6 |
| 8 | Aldehydes, Ketones and Carboxylic Acids | 8 |
| 9 | Amines | 6 |
| 10 | Biomolecules | 7 |
| | **Total** | **70** |

### Unit 1: Solutions

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapor pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor

### Unit 2: Electrochemistry

Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.

### Unit 3: Chemical Kinetics

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order

reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.

**Unit 4: d and f Block Elements**

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$.

**Lanthanides** - Electronic configuration, oxidation states, chemical reactivity and lanthanide contraction and its consequences.

**Actinides** - Electronic configuration, oxidation states and comparison with lanthanides

**Unit 5: Coordination Compounds**

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).

**Unit 6: Haloalkanes and Haloarenes**

**Haloalkanes:** Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions.
**Haloarenes:** Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only).
Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

**Unit 7: Alcohols, Phenols and Ethers**

**Alcohols:** Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.
**Phenols:** Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.
**Ethers:** Nomenclature, methods of preparation, physical and chemical properties, uses

**Unit 8: Aldehydes, Ketones and Carboxylic Acids**

**Aldehydes and Ketones:** Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses.

**Carboxylic Acids:** Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

**Unit 9: Amines**

**Amines:** Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

**Diazonium salts:** Preparation, chemical reactions and importance in synthetic organic chemistry.

**Unit 10: Biomolecules**

**Carbohydrates -** Classification (aldoses and ketoses), monosaccahrides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates.

**Proteins** -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure.

**Vitamins -** Classification and functions.

**Nucleic Acids:** DNA and RNA.

## PRACTICAL

| 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**

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

**A. Surface Chemistry**

1. Preparation of one lyophilic and one lyophobic sol

Lyophilic sol - starch, egg albumin and gum

Lyophobic sol – aluminum hydroxide, ferric hydroxide, arsenous sulphide.

2. Dialysis of sol-prepared in (a) above.
3. Study of the role of emulsifying agents in stabilizing the emulsion of different oils.

**B. Chemical Kinetics**

1. Effect of concentration and temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid.
2. Study of reaction rates of any one of the following:
   - Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of Iodide ions.
   - Reaction between Potassium Iodate, ($KIO_3$) and Sodium Sulphate: ($Na_2SO_3$) using starch solution as 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 $Zn/Zn^{2+}||\ Cu^{2+}/Cu$ with change in concentration of electrolytes ($CuSO_4$ or $ZnSO_4$) at room temperature.

**E. Chromatography**

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

**F. Preparation of Inorganic Compounds**

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

**G. Preparation of Organic Compounds**

Preparation of any one of the following compounds

1. Acetanilide

2. Di -benzalAcetone
3. p-Nitroacetanilide
4. 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:**

1. Oxalic acid,
2. 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

**Cations:** $Pb^{2+}$,$Cu^{2+}$, $Al^{3+}$, $Fe^{3+}$,$Mn^{2+}$, $Ni^{2+}$ $Zn^{2+}$ $Co^{2+}$ $Ca^{2+}$$Sr^{2+}$ $Ba^{2+}$ $Mg^{2+}$, $NH_4^+$

**Anions:** $CO_3^{2-}$,$S^{2-}$ , $SO_3^{2-}$, $NO_3^-$, $NO_2^-$ , $Cl^-$, $Br^-$, $I^-$ ,$SO_4^{2-}$, $PO_4^{3-}$ , $CH_3COO^-$, $C_2O_4^{2-}$

**(Note: Insoluble salts excluded)**

**PROJECTS**

Scientific investigations involving laboratory testing and collecting information from other sources.

**A few suggested Projects**

a) Study of the presence of oxalate ions in guava fruit at different stages of ripening.

b) Study of quantity of casein present in different samples of milk.

c) Preparation of soybean milk and its comparison with the natural milk with respect to curd formation, effect of temperature, etc.

d) Study of the effect of Potassium Bisulphate as food preservative under various conditions (temperature, concentration, time, etc.)

e) Study of digestion of starch by salivary amylase and effect of pH and temperature on it.

f) Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, carrot juice, etc.

g) Extraction of essential oils present in Saunf (aniseed), Ajwain (carom), Illaichi (cardamom).

h) Study of common food adulterants in fat, oil, butter, sugar, turmeric power, chili powder and pepper.

***Note:*** *Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.*

**Practical Examination for Visually Challenged Learners Classes XI and XII**

| **Evaluation Scheme** | **Marks** |
|---|---|
| Identification/Familiarity with the apparatus | 5 |
| Written test (based on given/prescribed practical's) | 10 |
| Practical Record | 5 |
| Viva | 10 |
| **Total** | **30** |

**General Guidelines**

- The practical examination will be of two-hour duration.
- A separate list of ten experiments is included here.
- The written examination in practicals for these students will be conducted at the time of practical examination of all other students.
- The written test will be of 30 minutes' duration.
- The question paper given to the students should be legibly typed. It should contain a total of 15 practical skill based very short answer type questions. A student would be required to answer any 10 questions.
- A writer may be allowed to such students as per CBSE examination rules.
- All questions included in the question papers should be related to the listed practicals
- Every question should require about two minutes to be answered.
- These students are also required to maintain a practical file. A student is expected to record at least five of the listed experiments as per the specific instructions for each subject. These practicals should be duly checked and signed by the internal examiner.
- The format of writing any experiment in the practical file should include aim, apparatus required, simple theory, procedure, related practical skills, precautions etc.
- Questions may be generated jointly by the external/internal examiners and used

for assessment.

- The viva questions may include questions based on basic theory/principle/concept, apparatus/materials/ chemicals required, procedure, precautions, sources of error etc.

**List of apparatus for identification/familiarity for assessment in practical (All experiments)**

Beaker, glass rod, tripod stand, wire gauze, Bunsen burner, Whatman filter paper, gas jar, capillary tube, pestle and mortar, test tubes, tongs, test tube holder, test tube stand, burette, pipette, conical flask, standard flask, clamp stand, funnel, filter paper

**Hands-on Assessment**

- Identification/familiarity with the apparatus
- Odour detection in qualitative analysis

**List of Experiments**

**The experiments have been divided into two sections: Section A and Section B. The experiments mentioned in Section B are mandatory.**

## SECTION A

### A. Surface Chemistry

1. Preparation of one lyophilic and one lyophobic sol
   i. Lyophilic sol - starch, egg albumin and gum
   ii. Lyophobic sol – Ferric hydroxide

### B. Chromatography

Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values (distance values may be provided).

### C. Tests for the functional groups present in organic compounds

1. Alcoholic and Carboxylic groups
2. Aldehyde and Kenotic groups

### D. Characteristic tests of carbohydrates and proteins in the given foodstuffs.

### E. Preparation of Inorganic Compounds- Potash Alum

## SECTION B (Mandatory)

### F. Quantitative analysis

1. (a) Preparation of a given volume of the standard solution of Oxalic acid.

   (b) Determination of molarity of $KMnO_4$ solution by titrating it against a standard solution of Oxalic acid.

2. The above exercise [F 1 (a) and (b)] to be conducted using Ferrous ammonium sulphate (Mohr's salt)

### G. Qualitative Analysis

Determination of one anion and one cation in a given salt

**Cation -** $NH_4^+$

**Anions:** $CO_3^{2-}$, $S^{2-}$ , $SO_3^{2-}$, , $Cl^-$, $CH_3COO^-$

**(Note: insoluble salts excluded)**

**Note:** *The above practical may be carried out in an experiential manner rather than recording observations.*

**Prescribed Books:**

1. Chemistry Part – I, Class-XII, Published by NCERT.
2. Chemistry Part – II, Class-XII, Published by NCERT.
3. Manual of Microscale Chemistry laboratory kit.

**Links for NCERT textbooks:**

1. **https://ncert.nic.in/textbook.php?lech1=0-5**
2. **https://ncert.nic.in/textbook.php?lech2=0-5**
3. **https://ncert.nic.in/division/dek/pdf/Manual_01.pdf**

## QUESTION PAPER DESIGN CLASSES XI & XII

| S.No | Domains | Total Marks | % |
|---|---|---|---|
| 1 | **Remembering and Understanding:**<br>Exhibit memory of previously learned material by recalling facts, terms, basic concepts and answers. Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas. | 28 | 40 |
| 2 | **Applying:**<br>Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way. | 21 | 30 |
| 3 | **Analysing, Evaluating and Creating:**<br>Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.<br>Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions. | 21 | 30 |

1. No chapter wise weightage is provided, however, care to be taken to cover all the chapters.
2. Suitable internal variations may be made for generating various templates.
3. There will be no overall choice in the question paper.
4. However, 33% internal choices will be given in all the sections.

**COURSE STRUCTURE**

**CLASS – XII**

**(2025-26)**

**One Paper** **Max. Marks: 80**

| No. | Units | Marks |
|---|---|---|
| I. | Relations and Functions | 08 |
| II. | Algebra | 10 |
| III. | Calculus | 35 |
| IV. | Vectors and Three - Dimensional Geometry | 14 |
| V. | Linear Programming | 05 |
| VI. | Probability | 08 |
| | **Total** | **80** |
| | **Internal Assessment** | **20** |

## 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.

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

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

Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

### 4. Application of the Integrals

Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only)

### 5. Differential Equations

Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type:

$\frac{dy}{dx} + py = q$, where $p$ and $q$ are functions of $x$ or constants.

$\frac{dx}{dy} + px = q$, where $p$ and $q$ are functions of $y$ or constants.

## 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.

### 2. Three-dimensional Geometry

Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.

## 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).

## Unit-VI: Probability

### 1. Probability

Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem.

**MATHEMATICS (Code No. – 041)**

**QUESTION PAPER DESIGN**

**CLASS – XII (2025-26)**

**Time: 3 hours** **Max. Marks: 80**

| S. No. | Typology of Questions | Total Marks | % Weightage |
|---|---|---|---|
| 1 | **Remembering:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.<br>**Understanding:** Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas | 44 | 55 |
| 2 | **Applying:** Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way. | 20 | 25 |
| 3 | **Analysing :**<br>Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations<br>**Evaluating:**<br>Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.<br>**Creating:**<br>Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions | 16 | 20 |
| | **Total** | **80** | **100** |

1. *No chapter wise weightage. Care to be taken to cover all the chapters*
2. *Suitable internal variations may be made for generating various templates keeping the overall weightage to different form of questions and typology of questions same.*

**Choice(s):**

There will be no overall choice in the question paper. However, 33% internal choices will be given in all the sections

| INTERNAL ASSESSMENT | 20 MARKS |
|---|---|
| Periodic Tests (Best 2 out of 3 tests conducted) | 10 Marks |
| Mathematics Activities | 10 Marks |

**Note**: For activities NCERT Lab Manual may be referred.

**Conduct of Periodic Tests:**

Periodic Test is a Pen and Paper assessment which is to be conducted by the respective subject teacher. The format of periodic test must have questions items with a balance mix, such as, very short answer (VSA), short answer (SA) and long answer (LA) to effectively assess the knowledge, understanding, application, skills, analysis, evaluation and synthesis. Depending on the nature of subject, the subject teacher will have the liberty of incorporating any other types of questions too. The modalities of the PT are as follows:

a) **Mode:** The periodic test is to be taken in the form of pen-paper test.

b) **Schedule:** In the entire Academic Year, three Periodic Tests in each subject may be conducted as follows:

| Test | Pre-Mid-term (PT-I) | Mid-Term (PT-II) | Post Mid-Term (PT-III) |
|---|---|---|---|
| Tentative Month | July-August | November | December-January |

*This is only a suggestive schedule and schools may conduct periodic tests as per their convenience. The winter bound schools would develop their own schedule with similar time gaps between two consecutive tests.*

c) **Average of Marks**: Once schools complete the conduct of all the three periodic tests, they will convert the weightage of each of the three tests into ten marks each for identifying best two tests. The best two will be taken into consideration and the average of the two shall be taken as the final marks for PT.

d) The school will ensure simple documentation to keep a record of performance as suggested in detail circular no. Acad-05/2017.

e) **Sharing of Feedback/Performance**: The students' achievement in each test must be shared with the students and their parents to give them an overview of the level of learning that has taken place during different periods. Feedback will help parents formulate interventions (conducive ambience, support materials, motivation and morale-boosting) to further enhance learning. A teacher, while sharing the feedback with student or parent, should be empathetic, non- judgmental and motivating. It is recommended that the teacher share best examples/performances of IA with the class to motivate all learners

**Assessment of Activity Work:**

Throughout the year any 10 activities shall be performed by the student from the activities given in the NCERT Laboratory Manual for the respective class (XI or XII) which is available on the link: http://www.ncert.nic.in/exemplar/labmanuals.html a record of the same may be kept by the student. An year end test on the activity may be conducted

The weightage are as under:

- The activities performed by the student throughout the year and record keeping: 5 marks
- Assessment of the activity performed during the year end test: 3 marks
- Viva-voce: 2 marks

## ENGLISH CORE
## CLASS – XII (2025-26)

### Section A
### Reading Skills-22 Marks

**I. Reading Comprehension through Unseen Passage** **12+10 = 22 Marks**

1. One unseen passage to assess comprehension, interpretation, analysis and inference. Vocabulary assessment will also be assessed via inference. 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 700-750 words.

Multiple Choice Questions / Objective Type Questions and Short Answer Type Questions (to be answered in 40-50 words) will be asked.

### Section B
### Creative Writing Skills-18 Marks

3. Notice, up to 50 words. One out of the two given questions to be answered. **(4 Marks**: Format :1 / Content: 2 / Accuracy of Spelling and Grammar: 1).

4. Formal/Informal Invitation and Reply, up to 50 words. One out of the two given questions to be answered. **(4 Marks**: Format: 1 / Content: 2 / Accuracy of Spelling and Grammar :1).

5. Letters based on verbal/visual input, to be answered in approximately 120-150 words. Letter types include application for a job with bio data or resume. Letters to the editor (giving suggestions or opinion on issues of public interest). One out of the two given questions to be answered. **(5 Marks**: Format: 1/Organisation of Ideas:1/Content:2/ Accuracy of Spelling and Grammar :1).

6. Article/ Report Writing, descriptive and analytical in nature, based on verbal inputs, to be answered in 120-150 words. One out of the two given questions to be answered. **(5 Marks**:Format:1/Organisation of Ideas:1/Content:2/Accuracy of Spelling and Grammar:1).

## Section C

### Literature Text Book and Supplementary Reading Text- 40 Marks

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.

7. One Poetry extract out of two, from the book **Flamingo,** to assess comprehension, interpretation, analysis, inference and appreciation. **(6x1=6 Marks)**

8. One Prose extract out of two, from the book **Vistas,** to assess comprehension, interpretation, analysis, evaluation and appreciation. **(4x1=4 Marks)**

9. One prose extract out of two from the book **Flamingo,** to assess comprehension, interpretation, analysis, inference and evaluation. **(6x1=6Marks)**

10. Short answer type questions **(from Prose and Poetry from the book Flamingo)**, to be answered in 40-50 words each. Questions should elicit inferential responses through critical thinking. Five questions out of the six given, are to be answered. **(5x2=10 Marks)**

11. Short answer type questions, from **Prose (Vistas)**, to be answered in 40- 50 words each. Questions should elicit inferential responses through critical thinking. Any two out of three questions to be done. **(2x2=4 Marks)**

12. One Long answer type question, from **Prose/Poetry (Flamingo)**, 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. **(1x5=5 Marks)**

13. One Long answer type question, based on the chapters from the book **Vistas**, 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. **(1x5=5 Marks)**

## Prescribed Books

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

**Prose**

- The Last Lesson
- Lost Spring
- Deep Water
- The Rattrap
- Indigo
- Poets and Pancakes
- The Interview
- Going Places

**Poetry**

- My Mother at Sixty-Six
- Keeping Quiet
- A Thing of Beauty
- A Roadside Stand
- Aunt Jennifer's Tigers

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

- The Third Level
- The Tiger King
- Journey to the End of the Earth
- The Enemy
- On the Face of It
- Memories of Childhood
    - The Cutting of My Long Hair
    - We Too are Human Beings

**INTERNAL ASSESSMENT**

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

**ENGLISH CORE**

**QUESTION PAPER DESIGN**

**CLASS- XII (2025-26)**

| Section | Competencies | Total marks |
|---|---|---|
| **Reading Skills** | Conceptual understanding, decoding, Analyzing, inferring, interpreting, appreciating, literary, conventions and vocabulary, summarizing and using appropriate format/s. | 22 |
| **Creative Writing Sills** | Conceptual Understanding, application of rules, Analysis, Reasoning, appropriate style and tone, using appropriate format and fluency, inference, analysis, evaluation and creativity. | 18 |
| **Literature Text Book and Supplementary Reading Text** | Recalling, reasoning, critical thinking, appreciating literary convention, inference, analysis, creativity with fluency. | 40 |
| | **TOTAL** | **80** |
| **Internal Assessment** | Assessment of Listening and Speaking Skills<br>• Listening<br>• Speaking | **10**<br>5+5 |
| | • Project Work | **10** |
| | **GRAND TOTAL** | **100** |

**Annexure I**

## GUIDELINES FOR INTERNAL ASSESSMENT

**Classes XI-XII** **Total Marks: 20**

ALS must be seen as an integrated component of all four language skills rather than a compartment of two. Suggested activities, therefore, take into consideration an integration of the four language skills but during assessment, emphasis will be given to speaking and listening, since reading and writing are already being assessed in the written exam.

### Assessment of Listening and Speaking Skills: (5+5=10 Marks)

i. **Activities:**

- Subject teachers must refer to books prescribed in the syllabus.
- In addition to the above, teachers may plan their own activities and create their own material for assessing the listening and speaking skills.

ii. **Parameters for Assessment:** The listening and speaking skills are to be assessed on the following parameters:

a. Interactive competence (Initiation & turn taking, relevance to the topic)

b. Fluency (cohesion, coherence and speed of delivery)

c. Pronunciation

d. Language (grammar and vocabulary)

### SUGGESTIVE RUBRICS

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **Interaction** | • Contributions are mainly unrelated to those of other speakers<br>• Shows hardly any initiative in the development of conversation<br>• Very limited interaction | • Contributions are often unrelated to those of the other speaker<br>• Generally passive in the development of conversation | • Develops interaction adequately, makes however minimal effort to initiate conversation<br>• Needs constant prompting to take turns | • Interaction is adequately initiated and developed<br>• Takes turn but needs some prompting | • Initiates & logically develops simple conversation on familiar topics<br>• Takes turns appropriately |
| **Fluency & Coherence** | • Noticeably/ long pauses; rate of speech is slow | • Usually fluent; produces simple speech | • Is willing to speak at length, however repetition is | • Speaks without noticeable effort, with a little repetition | • Speaks fluently almost with no repetition & minimal |

| | | | | | |
|---|---|---|---|---|---|
| | • Frequent repetition and/or self-correction this is all right in informal conversation<br>• Links only basic sentences; breakdown of coherence evident | fluently, but loses coherence in complex communication<br>• Often hesitates and/or resorts to slow speech<br>• Topics partly developed; not always concluded logically | noticeable<br>• Hesitates and/or self corrects; occasionally loses coherence<br>• Topics developed, but usually not logically concluded | • Demonstrates hesitation to find words or use correct grammatical structures and/or self-correction<br>• Topics not fully developed to merit. | hesitation Develops topic fully & coherently |
| **Pronunciation** | • Frequent inaccurate pronunciation<br>• Communication is severely affected | • Frequently unintelligible articulation<br>• Frequent phonological errors<br>• Major communication problems | • Largely correct pronunciation &clear articulation except occasional errors | • Mostly correct pronunciation & clear articulation<br>• Is clearly understood most of the time;very few phonological errors | • Pronounces correctly & articulates clearly<br>• Is always comprehensible<br>• uses appropriate intonation |
| **Vocabulary & Grammar** | • Demonstrates almost no flexibility, and mostly struggles for appropriate words<br>• Many Grammatical errors impacting communication | • Is able to communicate on some of the topics, with limited vocabulary.<br>• Frequent errors, but self- corrects | • Is able to communicate on most of the topics, with limited vocabulary. A few grammatical errors | • Is able to communicate on most of the topics with appropriate vocabulary<br>• Minor errors that do not hamper communication | • Is able to communicate on most of the topics using a wide range of appropriate vocabulary, using new words and expression<br>• No grammatical errors |

**iii. Schedule:**

- The practice of listening and speaking skills should be done throughout the academic year.
- The final assessment of the skills is to be done as per the convenience and schedule of the school.

## Project Work + Viva: 10 Marks

Out of ten marks, 5 marks will be allotted for the project report/script /essay etc. and 5 marks for the viva

### I. Schedule:

- Schools may refer to the suggestive timeline given in these guidelines for the planning, preparation and viva-voce of ALS based projects.
- The final assessment of the skills may be done on the basis of parameters suggested by the Board. Language teachers, however, have the option to adopt/ modify these parameters according to their school specific requirements.

### II. Suggestions for Project Work:

- The Project can be inter-disciplinary in theme. The ideas/issues highlighted in the chapters/ poems/ drama given the prescribed books can also be developed in the form of a project. Students can also take up any relevant and age-appropriate theme.
- Such topics may be taken up that provide students with opportunities for listening and speaking. Some suggestions are as follows:

**a) Interview-Based research:**

**Example:**

- Students can choose a topic on which to do their research/ interview, e.g. a student can choose the topic: "Evolving food tastes in my neighbourhood" or "Corona pandemic and the fallout on families." Read the available literature.
- The student then conducts interviews with a few neighbours on the topic. For an interview, with the help of the teacher, student will frame questions based on the preliminary research/background.
- The student will then write an essay/ write up / report etc. up to 1000 words on his/her research and submit it. He/ She will then take a viva on the research project. The project can be done in individually or in pairs/ groups

**b)** Students listen to podcasts/ interviews/radio or TV documentary on a topic and prepare a report countering or agreeing with the speakers. Write an 800 - 1000 words report and submit. Take a viva on the report.

**c)** Students create their own video/ Audio, after writing a script. Before they decide a format, the following elements can be taken into consideration:

- Theme/topic of the audio / video. Would the child like to pick a current issue or something artistic like theatre?
- What are the elements that need to be part of the script?
- Will the video/audio have an interview with one or more guests?

- Would they prefer to improvise while chatting with guests, or work from a script?
- What would be the duration?
- How would they present the script/report to the teacher? Can it be in the form of a narrative?

**d) Students** write, **direct and present a theatrical production, /One act play**

This will be a project which will be done as a team. It will involve planning, preparation and presentation. In short, various language skills will be utilised. There will be researching, discussion, writing the script, auditioning and ultimately producing the play. The project will end with a presentation and subsequently a viva. Teachers will be able to assess the core language skills of the students and help them grow as 21st century critical thinkers.

**II. Instructions for the Teachers: -**

1. Properly orient students about the Project work, as per the present Guidelines.
2. Facilitate the students in the selection of theme and topic.
3. Create a rubric for assessment and share with the students before they start so that they know the parameters of assessment:

- Teachers need to familiarize themselves with the method of assessing students with the rubric-- a table with different criteria and a grading scale.
- Choose the criteria on which you will grade students and list them along the left side of the page.
- Create an even number of columns along the top of the page. These columns will represent potential skill levels of the students.
- Assessing students on four/five criteria is an easy way to begin. For each criterion, define the ability that student would exhibit at each of the levels.
- The more detailed you make your criteria, the easier it will be to evaluate each student and define the level at which the student is presenting.
  **{Sample Rubric is attached at the end for reference}**

**III. Parameters for Overall Assessment: -**

1. **Pronunciation**:

- When evaluating the pronunciation of the students, teachers must listen for clearly articulated words, pronunciation of unusual spellings and intonation.
- Assess the students for the pronunciation skills and determine at which level the student needs improvement.

2. **Vocabulary**:

After noting their pronunciation levels, evaluate the students on the use of extensive and appropriate **vocabulary** during the viva. Check if students are using vocabulary appropriate to the context about which they are speaking.

3. **Accuracy**:
   Grammar has always been an important component of language skills. As students speak/ answer the questions during the viva, listen to their **grammatical structures**. *Are they competent enough to use multiple tenses? Is their word order correct in a given sentence?* An effective speaker will automatically use the correct grammatical structures of his language.

4. **Communication**:

   Assessing the **communication skills** of the students means looking at more than language. Look at how creatively students use the language to make their points understood. Students with a low level of vocabulary and grammar may still have good communication skills if they are able to make the teacher understand their point of view.

5. **Interaction**:
   - During the viva teachers need to ask the students some questions. Questions need to be based on the projects that have been suggested or chosen by the students.
   - It is imperative for a teacher to read the essays/project reports before they can be ready to ask questions.
   - Teachers need to observe how students answer the questions that are posed to them: *Are they able to understand and answer questions independently or can they answer only when the questions are translated into simpler words or repeated? Are they able to give appropriate responses in a conversation*?
   - These elements of **interaction** are necessary for clear and effective communication. A student with effective interaction skills will be able to answer questions with relative ease and follow the flow of conversation.

6. **Fluency**:
   - Fluency may be the easiest quality to judge in the students' speech: *How comfortable are they as they speak and express themselves? How easily do the words come out? Are there inappropriate pauses and gaps in the way a student speaks?*
   - **Fluency** is a judgement of this communication and is an important criterion when evaluating speaking skills. These criteria: pronunciation, vocabulary, accuracy, interaction and fluency are all the hallmarks of a student's overall speaking abilities.
   - Teachers must also remember that some **students may excel in one area and struggle in another**. Helping the students understand these issues will enable them to become effective speakers in future. Let your students know that you will be assessing them in these various areas when you evaluate their progress and encourage them to work and improve in these areas.
   - **Finally,** teachers must remember that a proper evaluation of the students will take into consideration **more than just one oral interview on the final ASL** project. Teachers must take note of a student's progress throughout the academic year.

## IV. Project-Portfolio/ Project Report

The **Project-Portfolio/Project Report** is a compilation of the work that the students produce during the process of working on their ALS Project.

**The Project-Portfolio may include the following:**

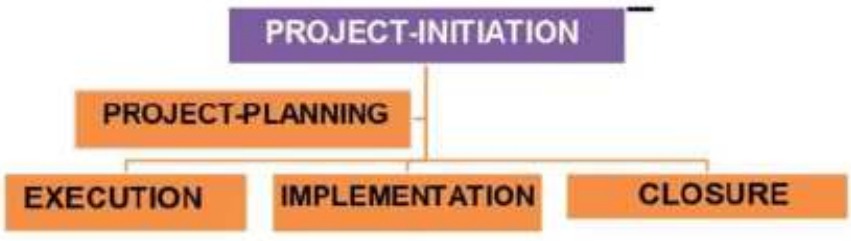
- Cover page, with title of project, school details/details of students.
- Statement of purpose/objectives/goals
- Certificate of completion under the guidance of the teacher.
- Students Action Plan for the completion of assigned tasks.
- Materials such as scripts for the theatre/role play, questionnaires for interview, written assignments, essays, survey-reports and other material evidence of learning progress and academic accomplishment.
- The 800-1000 words essay/Script/Report.
- Student/group reflections.
- If possible, Photographs that capture the positive learning experiences of the student(s).
- List of resources/bibliography

**The following points must be kept for consideration while assessing the project portfolios:**

- Quality of content of the project
- Accuracy of information
- Adherence to the specified timeline
- Content in respect of (spellings, grammar, punctuation)
- Clarity of thoughts and ideas
- Creativity
- Contributions by group members
- Knowledge and experience gained

## V. Suggestive Timeline:

**The FIVE Steps in Project Plan**



| Month | Objectives |
|---|---|
| **Planning and Research for the Project Work**<br><br>**Preferably till November-December** | • Teachers plan a day to orient students about the ALS projects, details are shared with all stakeholders.<br>• Students choose a project, select team members and develop project- plan.<br>• Group meets (preferably online) and reports to the team leader about the progress: shortfalls and successes are detailed.<br>• Team leader apprises teacher-mentor.<br>• Students working individually or in pairs also update the teachers.<br>• A logical, deliverable and practical plan is drafted by the team/ pair/individual. Goals/objectives are clearly defined for all.<br>• Work is delegated to team members by the team leader. Students wishing to work alone develop their own plan of Action.<br>• Detailed project schedules are shared with the teacher. |
| **December- January** | • Suggestions and improvements are shared by the teacher, wherever necessary.<br>• Group members coordinate and keep communication channels<br>open for interaction.<br>• Gaps (if any) are filled with the right skill sets by the Team Leader/ individual student.<br>• The final draft of the project portfolio/ report is prepared and submitted for evaluation. |
| **January-February** | • Students are assessed on their group/pair/individual presentations on allotted days. Final Viva is conducted by the External/Internal examiner. |
| **February-March or as per the timelines given by the Board** | • 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 mins | 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 /effort seen/ considerable work done/ Creative and relevant costumes |
| **PREPAREDNESS** | Student/ group seems to be unprepared | Some visible preparedness 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 mis-pronounced | Speaks clearly some words are mis-pronounced | Speaks clearly 90% of the time/ a few mis-pronounced words | Speaks clearly and distinctly 95% of time/ Few mis-pronounced words | Speaks clearly distinctly 95% of time/ fluency in pronunciation |
| **USE OF PROPS (Theatre/Role Play)** | Only 1/no relevant props used Very little use of facial expressions /body language, Does not generate much interest | 1 to 2 relevant props used Little Use of facial expressions and body language | 2 to 3 relevant props used Facial expressions and body language is used to try to generate some enthusiasm | 3 to 4 relevant props used Facial expression and body language sometimes generate enthusiasm with the topic | 4 to 5 relevant props used Facial expression and body language generate enthusiasm with the topic |
| **PORTFOLIO-PRESENTATION** | Inadequate & unimpressive | Somewhat suitable & convincing | Adequate & relevant | Interesting, enjoyable & relevant | Brilliant, creative& exceptional |

# हिंदी (आधार)
## विषय कोड – 302
## कक्षा 12वीं (2025 -26)
## परीक्षा हेतु पाठ्यक्रम विनिर्देशन

- **प्रश्न -पत्र तीन खण्डों – खंड- क, ख और ग में होगा।**
- **खंड- क में अपठित बोध पर आधारित प्रश्न पूछे जाएँगे I सभी प्रश्नों के उत्तर देने होंगे।**
- **खंड- ख में अभिव्यक्ति और माध्यम पाठ्यपुस्तक के आधार पर प्रश्न पूछे जाएँगे। प्रश्नों में आंतरिक विकल्प दिए जाएँगे ।**
- **खंड- ग में आरोह भाग – 2 एवं वितान भाग – 2 पाठ्यपुस्तकों के आधार पर प्रश्न पूछे जाएँगे। प्रश्नों में आंतरिक विकल्प दिए जाएँगे ।**

**भारांक-80** **निर्धारित समय – 03 घंटे**

### वार्षिक परीक्षा हेतु भार विभाजन

| | | |
|---|---|---|
| | **खंड-क (अपठित बोध)** | 18 अंक |
| 1 | 01 अपठित गद्यांश (लगभग 250 शब्दों का) पर आधारित बोध, चिंतन, विश्लेषण पर बहुविकल्पीय प्रश्न, अतिलघूत्तरात्मक प्रश्न, लघूत्तरात्मक प्रश्न पूछे जाएँगे I (बहुविकल्पीय प्रश्न 01 अंक x 03 प्रश्न = 03 अंक, अतिलघूत्तरात्मक प्रश्न 01 अंक x 01 प्रश्न = 01 अंक, लघूत्तरात्मक प्रश्न 02 अंक x 03 प्रश्न = 06 अंक) | 10 अंक |
| 2 | 01 अपठित पद्यांश (लगभग 100 शब्दों का) पर आधारित बोध, सराहना, सौंदर्य, चिंतन, विश्लेषण आदि पर बहुविकल्पीय प्रश्न, अतिलघूत्तरात्मक प्रश्न लघूत्तरात्मक प्रश्न पूछे जाएँगे I (बहुविकल्पीय प्रश्न 01 अंक x 03 प्रश्न = 03 अंक, अतिलघूत्तरात्मक प्रश्न 01 अंक x 01 प्रश्न = 01 अंक, लघूत्तरात्मक प्रश्न 02 अंक x 02 प्रश्न = 04 अंक) | 08 अंक |
| | **खंड- ख (अभिव्यक्ति और माध्यम पाठ्यपुस्तक के आधार पर ) पाठ संख्या 3, 4, 5, 11, 12 तथा 13 पर आधारित** | 22 अंक |
| 3 | दिए गए 03 अप्रत्याशित विषयों में से किसी 01 विषय पर **आधारित** लगभग 120 शब्दों में रचनात्मक लेखन (06 अंक x 01 प्रश्न) | 06 अंक |
| 4 | **पाठ संख्या 3, 4, 5, 11 तथा 13 पर आधारित** (02 अंक x 04 प्रश्न= 08 अंक ) (लगभग 40 शब्दों में), (04 अंक x 02 प्रश्न = 08 अंक) (लगभग 80 शब्दों में) (विकल्प सहित) | 16 अंक |
| | **खंड- ग (आरोह भाग – 2 एवं वितान भाग-2 पाठ्यपुस्तकों के आधार पर )** | 40 अंक |
| 5 | पठित काव्यांश पर आधारित 05 बहुविकल्पी प्रश्न (01 अंक x 05 प्रश्न) | 05 अंक |
| 6 | काव्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 60 शब्दों में) | 06 अंक |

| | | |
|---|---|---|
| | (03 अंक x 02 प्रश्न) | |
| 7 | काव्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 40 शब्दों में) (02 अंक x 02 प्रश्न) | 04 अंक |
| 8 | पठित गद्यांश पर आधारित 05 बहुविकल्पी प्रश्न (01 अंक x 05 प्रश्न) | 05 अंक |
| 9 | गद्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 60 शब्दों में) (03 अंक x 02 प्रश्न) | 06 अंक |
| 10 | गद्य खंड पर आधारित 03 प्रश्नों में से किन्हीं 02 प्रश्नों के उत्तर (लगभग 40 शब्दों में) (02 अंक x 02 प्रश्न) | 04 अंक |
| 11 | वितान के पाठों पर आधारित 03 में से 02 प्रश्नों के उत्तर (लगभग 60 शब्दों में) (05 अंक x 02 प्रश्न) | 10 अंक |
| 13 | **(अ) श्रवण तथा वाचन**<br>**(ब) परियोजना कार्य** | 10+10 = 20 अंक |
| **कुल अंक** | | **100 अंक** |

**निर्धारित पुस्तकें :**

1. **आरोह, भाग–2**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित
2. **वितान, भाग–2**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित
3. **'अभिव्यक्ति और माध्यम'**, एन.सी.ई.आर.टी., नई दिल्ली द्वारा प्रकाशित

**नोट – पाठ्यक्रम के निम्नलिखित पाठ हटा दिए गए हैं**

| | | |
|---|---|---|
| **आरोह भाग - 2** | काव्य खंड | • गजानन माधव मुक्तिबोध – सहर्ष स्वीकारा है (पूरा पाठ)<br>• फ़िराक गोरखपुरी – गज़ल |
| | गद्य खंड | • विष्णु खरे – चार्ली चैप्लिन यानी हम सब (पूरा पाठ)<br>• रज़िया सज्जाद ज़हीर - नमक (पूरा पाठ) |
| **वितान भाग - 2** | | • एन फ्रैंक - डायरी के पन्ने |

**कक्षा बारहवीं हेतु प्रश्नपत्र का विस्तृत प्रारूप जानने के लिए कृपया बोर्ड द्वारा जारी प्रतिदर्श प्रश्नपत्र देखें।**

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# INFORMATICS PRACTICES
## Subject Code - 065
## Class XII (2025-26)

1. **Prerequisite:** Informatics Practices – Class XI

2. **Learning Outcomes**

   At the end of this course, students will be able to:

   - Create Series, Data frames and apply various operations.
   - Visualize data using relevant graphs.
   - Design SQL queries using aggregate functions.
   - Import/Export data between SQL database and Pandas.
   - Learn terminology related to networking and internet.
   - Identify internet security issues and configure browser settings.
   - Understand the impact of technology on society including gender and disability issues

3. **Distribution of Marks and Periods**

| Unit No | Unit Name | Marks |
|---|---|---|
| 1 | Data Handling using Pandas and Data Visualization | 25 |
| 2 | Database Query using SQL | 25 |
| 3 | Introduction to Computer Networks | 10 |
| 4 | Societal Impacts | 10 |
| | Project | - |
| | Practical | 30 |
| | **Total** | **100** |

**4. Unit Wise syllabus**

**Unit 1: Data Handling using Pandas -I**

Introduction to Python libraries- Pandas, Matplotlib;

Data structures in Pandas - Series and Data Frames.

Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head() and Tail() functions; Selection, Indexing and Slicing.

Data Frames: creation- from dictionary of Series, list of dictionaries, Text/CSV files, display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing;

Importing/Exporting Data between CSV files and Data Frames.

**Data Visualization**

Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram

Customizing plots: adding label, title, and legend in plots.

**Unit 2: Database Query using SQL**

Revision of database concepts and SQL commands covered in class XI

Math functions: POWER (), ROUND (), MOD ().

Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (),

LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM ().

Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (),

DAYNAME ().

Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*).

Querying and manipulating data using Group by, Having, Order by.

Working with two tables using equi-join

**Unit 3: Introduction to Computer Networks**

Introduction to networks, Types of network: PAN, LAN, MAN, WAN.

Network Devices: modem, hub, switch, repeater, router, gateway

Network Topologies: Star, Bus, Tree, Mesh.

Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP.

Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website.

Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.

### Unit 4: Societal Impacts

Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act.

E-waste: hazards and management.

Awareness about health concerns related to the usage of technology.

### Project Work

The aim of the class project is to create tangible and useful IT application. The learner may identify a real-world problem by exploring the environment. e.g. Students can visit shops/business places, communities or other organizations in their localities and enquire about the functioning of the organization, and how data are generated, stored, and managed.

The learner can take data stored in csv or database file and analyze using Python libraries and generate appropriate charts to visualize.

Learners can use Python libraries of their choice to develop software for their school or any other social good.

Learners should be sensitized to avoid plagiarism and violation of copyright issues while working on projects. Teachers should take necessary measures for this. Any resources (data, image etc.) used in the project must be suitably referenced.

The project can be done individually or in groups of 2 to 3 students. The project should be started by students at least 6 months before the submission deadline.

### Practical Marks Distribution

| S. No. | Unit Name | Marks |
|---|---|---|
| 1 | Programs using Pandas and Matplotlib | 8 |
| 2 | SQL Queries | 7 |

| | | |
|---|---|---|
| 3 | Practical file (minimum of 15 programs based on Pandas, 4 based on Matplotlib and 15 SQL queries must be included) | 5 |
| 4 | Project Work (using concepts learned in class XI and XII) | 5 |
| 5 | Viva-Voce | 5 |
| | **TOTAL** | **30** |

## 5. Suggested Practical List

### 5.1 Data Handling

1. Create a panda's series from a dictionary of values and a ndarray
2. Given a Series, print all the elements that are above the 75th percentile.
3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per category.
4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions
5. Filter out rows based on different criteria such as duplicate rows.
6. Importing and exporting data between pandas and CSV file

### 5.2 Visualization

1. Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise.
2. For the Data frames created above, analyze, and plot appropriate charts with title and legend.
3. Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.

### 5.3 Data Management

1. Create a student table with the student id, name, and marks as attributes where the student id is the primary key.
2. Insert the details of a new student in the above table.
3. Delete the details of a student in the above table.
4. Use the select command to get the details of the students with marks more than 80.
5. Find the min, max, sum, and average of the marks in a student marks table.
6. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by.
7. Write a SQL query to order the (student ID, marks) table in descending order of the marks.

# MASS MEDIA STUDIES (SUB. CODE 835)

## CLASS – XII (SESSION 2025-2026)

**Total Marks: 100 (Theory-60 + Practical-40)**

| | UNITS | NO. OF HOURS for Theory and Practical | | MAX. MARKS for Theory and Practical |
|---|---|---|---|---|
| Part A | **Employability Skills** | | | |
| | Unit 1: Communication Skills-IV | 10 | | 2 |
| | Unit 2: Self-management Skills-IV | 10 | | 2 |
| | Unit 3: ICT Skills-IV | 10 | | 2 |
| | Unit 4: Entrepreneurial Skills-IV | 15 | | 2 |
| | Unit 5: Green Skills-IV | 05 | | 2 |
| | **Total** | **50** | | **10** |
| Part B | **Subject Specific Skills** | **Theory** | **Practical** | |
| | Unit 1: Selling / Marketing/ Exhibiting a Product through Advertising | 30 | 20 | 17 |
| | Unit 2: Introduction to the Production Process | 30 | 40 | 17 |
| | Unit 3: New Media | 20 | 40 | 08 |
| | Unit 4: Creative Contributions of the Key People | 20 | 10 | 08 |
| | **Total** | **100** | **110** | **50** |
| Part C | **Practical Work** | | | |
| | Practical Examination / Written Test | -- | | 15 |
| | Viva Voce | -- | | 05 |
| | **Total** | -- | | **20** |
| Part D | **Project Work/Field Visit/ Practical File/ Student Portfolio** | | | 15 |
| | Viva Voce | | | 05 |
| | **Total** | -- | | **20** |
| | **GRAND TOTAL** | **260** | | **100** |

# DETAILED CURRICULUM/ TOPICS FOR CLASS XII

## PART-A: EMPLOYABILITY SKILLS

| S. No. | Units | Duration in Hours |
|---|---|---|
| 1. | Unit 1: Communication Skills-IV | 10 |
| 2. | Unit 2: Self-management Skills-IV | 10 |
| 3. | Unit 3: Information and Communication Technology Skills-IV | 10 |
| 4. | Unit 4: Entrepreneurial Skills-IV | 15 |
| 5. | Unit 5: Green Skills-IV | 05 |
| | **TOTAL DURATION** | **50** |

**NOTE:** **Detailed Curriculum/ Topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.**

## Part-B – SUBJECT SPECIFIC SKILLS

### UNIT–I: SELLING/MARKETING/EXHIBITING A PRODUCT THROUGH ADVERTISING

**Chapter 1: Advertising concept & process**

1. Product
2. specifications
3. Targeting
4. buyers

**Chapter 2: Functions of Advertising**

1. Promotion of product
2. Drive sales
3. Build a brand identity
4. Increase the buzz

**Chapter 3: Types of advertising**

1. Print-newspapers, magazines, brochures, fliers, posters
2. O OH-billboards, kiosks, tradeshows events
3. Broadcast advertising - Radio, TV, digital Internet + mobile
4. In film' promos
5. Celebrity endorsements
6. Cross promotions
7. Merchandise
8. Games (Mobile and computer
9. Covert advertising

**Chapter 4: Forms of Advertising**

1. Product Advertising
2. Institutional Advertising (Corporate)
3. Social Service – PSA Advocacy Advertising
4. Comparative Advertising Cooperative Advertising Direct Mail.
5. A Point-of-Purchase Advertising.
6. Informational Advertising.

## UNIT II: INTRODUCTION TO THE PRODUCTION PROCESS

**Chapter 1: Film**

1. Pre- shooting stage.
2. Shooting Stage.
3. Post-shooting Stage.

**Chapter 2: TV**

1. Pre- shooting stage.
2. Shooting Stage.
3. Post-shooting Stage.

**Chapter 3: Print**

1. Planning, writing, editing, designing.

**Chapter 4. Radio**

1. Planning, recording, editing, transmission.

**Chapter 5. Internet**

1. Planning, Creating and delivering.

## UNIT III: NEW MEDIA

**Chapter–1: Convergence and the New Possibilities of Communication**

Earlier models of communication

1. Internet as the meeting point of all the mass media.
2. Broadcasting
3. Mass communication model of a few transmitting to a vast number of receivers.
4. Gigantic organization.
5. Huge technical infra-structure
6. Large scale revenue.
7. The changed paradigm due to the Internet.
8. Empowering an individual to post data on the Internet.

9. Information, message in one medium triggering off activity in the others.
10. Many sources of the same information.
11. Distribution of the information between individuals on an unprecedented global scale.
12. Rapidity of opinion generation on a local, national and global scale.
13. The socio-political implications of the new information order.
14. The strengthening of democracy.
15. Emerging trends in Mass Communication

**UNIT IV: CREATIVE CONTRIBUTIONS OF THE KEY PEOPLE**

**Chapter 1: Film:**

1. Contributions made by Writer, Director, Producer, Actor, Cinematographer, Audiographer, Editor, Art Director, Music composer.

**Chapter 2: TV:**

1. Contributions made by Writer, Director, Producer, Actor, Cinematographer, Audiographer, Editor, Art Director, Music composer.

**Chapter 3: Print:**

1. Contributions made by Reporter, Sub-editor, Editor.

**Chapter 4: Radio:**

1. Contributions made by artist, speaker, interviewer, recordist, programme producer, station director.

**Chapter 5: Internet:**

1. Contributions made by writer, conceptualizer, editor, designer.

# 5. TEACHING ACTIVITIES

The teaching and training activities have to be conducted in classroom, laboratory/ workshops and field visits. Students should be taken to field visits for interaction with experts and to expose them to the various tools, equipment, materials, procedures and operations in the workplace. Special emphasis should be laid on the occupational safety, health and hygiene during the training and field visits.

**CLASSROOM ACTIVITIES**

Classroom activities are an integral part of this course and interactive lecture sessions, followed by discussions should be conducted by trained teachers. Teachers should make effective use of a variety of instructional or teaching aids, such as audio-video materials, colour slides, charts, diagrams, models, exhibits, hand-outs, online teaching materials, etc. to transmit knowledge and impart training to the students.

**PRACTICAL WORK IN LABORATORY/WORKSHOP**

Practical work may include but not limited to hands-on-training, simulated training, role play, case based studies, exercises, etc. Equipment and supplies should be provided to enhance hands-on learning experience of students. Only trained personnel should teach specialized techniques. A training plan that reflects tools, equipment, materials, skills and activities to be performed by the students should be submitted by the l teacher to the Head of the Institution.

**SKILL ASSESSMENT (PRACTICAL)**

Assessment of skills by the students should be done by the assessors/examiners on the basis of practical demonstration of skills by the candidate, Practical examination allows candidates to demonstrate that they have the knowledge and understanding of performing a task. This will include hands-on practical exam and viva voce. For practical, there should be a team of two evaluators. The same team of examiners will conduct the viva voce.

**Project Work** (individual or group project) is a great way to assess the practical skills on a certain time period or timeline. Project work should be given on the basis of the capability of the individual to perform the tasks or activities involved in the project. Projects should be discussed in the class and the teacher should periodically monitor the progress of the project and provide feedback for improvement and innovation. Field visits should be organised as part of the project work. Field visits can be followed by a small-group work/project work. When the class returns from the field visit, each group might be asked to use the information that they have gathered to prepare presentations or reports of their observations. Project work should be assessed on the basis of practical file or student portfolio.

**Student Portfolio** is a compilation of documents that supports the candidate's claim of competence. Documents may include reports, articles, photos of products prepared by students in relation to the unit of competency.

**Viva voce** allows candidates to demonstrate communication skills and content knowledge. Audio or video recording can be done at the time of viva voce. The number of external examiners would be decided as per the existing norms of the Board and these norms should be suitably adopted/adapted as per the specific requirements of the subject. Viva voce should also be conducted to obtain feedback on the student's experiences and learning during the project work/field visits.

# 6. ORGANISATION OF FIELD VISITS/EDUCATIONAL TOURS

In field visits, children will go outside the classroom to obtain specific information from experts or to make observations of the activities. A checklist of observations to be made by the students during the field visits should be developed by the Teachers for systematic collection of information by the students on the various aspects. Principals and Teachers should identify the different opportunities for field visits within a short distance from the school and make necessary arrangements for the visits. At least three field visits should be conducted in a year.

# 7. PRACTICAL GUIDELINES

**Portfolio Assessment:**

The Portfolio will consist of a compilation of all written submissions over the duration of the course. It is the sum total of the creative work executed by the student over the year. The Portfolio will consist of all written submissions over the duration of the course. The assignments would include written, project work and production output will be collected. The submission would include both the original and improved versions of assigned tasks reflective of gradual improvement.

Aims of the exercise of Portfolio are –

- To create a desire in the student to go beyond the text and class room learning
- To inculcate in the student the spirit of research
- To offer the scope for imaginative thinking
- To develop the power of interpretation
- To imbibe the notions of subjectivity and objectivity Objectives of the exercise of Portfolio are –

- The student begins to think independently and critically about the subject
- The student learns to develop his/her own themes
- The student learns to systematically gather facts and sift the data
- The student learns to use the data in a coherent and logical manner
- The student learns to follow one's imagination to create an original work
- The student learns the difference between analyzing someone else's work and creating one's own
- The student learns to develop distinct creative approaches to Fiction and Nonfiction
- The student learns to conceive and execute ideas that are medium-specific
- The student learns to identify upon his/her own strengths and weaknesses

**Assessment of the Portfolio-**

The basic guideline for Assessment of the Portfolio is to judge the student's individual growth along the aims and objectives stated above. Both quality and quantity of the work done cumulatively should receive equal consideration.

**PROJECT - NON-FICTION: STUDENTS WILL CONCEIVE, WRITE, DIRECT AND EDIT A NON-FICTION FILM PROJECT OF 3-5 MINUTES DURATION.**

**Guidelines**

In this, they will follow the film making process of going through the pre- production, production and post-production process. The idea will be submitted to the teacher first. It shall be discussed and approved. It is only after that, the student can undertake to do further research and writing of the script. The script shall be submitted along with the shooting schedule, the same will be approved by teacher and only after the clearance from the teacher will the shooting take place. Students will complete the project on video tape and submit it along as a video tape as well as in the DVD format with the docket containing all the paper work done by them.

1. Subjects of the films should be suitable for the audience of their own age group.
2. Social issues like Gender issues, Environmental issues, Education, Health, Livelihood, Rights on disability, Access, Road Safety, documentaries on Historical monuments, Art and Craft can be chosen. Initial research is very important with regard to pre-production and production. Students must understand and read about media ethics and understand the sensitivity of the issue concerned. Students must take up issues which they closely relate to in their everyday lives and are able to work on within their academic concerns.
3. Themes to illustrate facets of other arts could also be chosen. Issues relating to media could also be a domain. Students must understand their roots and cultural heritage which surrounds them. It is part of what they are. This consists of not just historical monuments; it surpasses subjects like rituals, traditional medicinal practices, folklore and anecdotes from their grandparents, about the city they live in, various performing arts and more.
4. Portraits of personalities with respect to their contribution to life may also be chosen. People who have made a difference within their community, their role models, people they look up to, those who inspire them or have encouraged them, they could be their relative, teacher, a household help or anyone known to them.
5. Basic Handycam video cameras and basic editing software like Adobe Premier or Windows Movie maker should suffice. Technical quality is important, but technological sophistication by itself will not carry much weight, as the purpose is to judge the overall programme making ability.
6. The preparation is as important as the product and will carry half the percentage in the total assessment of the project.
7. The time limit of 3-5 minutes is to be strictly observed. Anything drastically more or less in duration will negatively affect the assessment.

   These guidelines should be very clearly explained to the students and there should be no basic doubts about the approach in their minds.

# 8. LIST OF EQUIPMENT AND MATERIAL

***CAMERA***

1. One DSLR minimum 18 mega pixels, output 18-55mm and 70-300mm lens with external microphone connectivity.
2. One HD handycam video camera with external microphone connectivity. Video format MOV or MPEG4. OR One smart phone with external microphone connectivity.
3. One tripod.

***MICROPHONE***

1. One gun microphone with RCA output.
2. One lapel microphone with RCA output.
3 One mic for Radio studio multidirectional or unidirectional.

(*If school is not able to arrange microphone try to put subject closer to camera and in silence area for their byte and record dialogue and must off fan and air conditioner during without microphone shoot. These steps will help students to shoot without specific equipment*.)

***LIGHTS***

To create basic three-point lighting in any studio or classroom required lights are mentioned below-

a. Two LED soft lights
b. Two Baby spot lights
c. Two flood Cool lights
d. Multi 10 and multi 20 Reflectors silver and Gold or thermocol sheets.
e. Light Cutter stands with black clothes.

*(If school is not capable for arranging lighting equipment so shoot is preferred in natural sunlight.)*

***EDITING SYSTEM***

1. One computer system windows or Mac. Software required FCP (final cut pro) or Adobe premiere pro, Adobe Photoshop, Adobe After effects, capture card, Graphics card sound card.

***SCHOOL STUDIO SETUP***

1. Green Chroma wall.
2. Teleprompter.
3. Monitor.

These are the basic requirements for any Television or Radio production.

A screening room equipped with a television set or projector and speakers for playback of video or screening images through a computer.

# Physical Education (Subject Code 048)

## Class XII (2025-26)

| UNIT NO. | UNIT NAME | THE WEIGHTAGE (MARKS) ALLOTTED |
|---|---|---|
| | | |
| **UNIT 1** | Management of Sporting Events | 05 + 04***b**** |
| **UNIT 2** | Children and Women in Sports | 07 |
| **UNIT 3** | Yoga as Preventive measure for Lifestyle Disease | 06+01 ***b**** |
| **UNIT 4** | Physical Education & Sports for (CWSN) | 04+04 ***b**** |
| **UNIT 5** | Sports & Nutrition | 07 |
| **UNIT 6** | Test and Measurement in Sports | 08 |
| **UNIT 7** | Physiology & Injuries in Sport | 04+04 ***b**** |
| **UNIT 8** | Biomechanics and Sports | 10 |
| **UNIT 9** | Psychology and Sports | 07 |
| **UNIT 10** | Training in Sports | 09 |
| **PRACTICAL (LAB)#** | **Including 3 Practical** | **30** |
| **TOTAL** | **Theory 10 + Practical 3** | **Theory 70 + Practical 30 = 100** |

**Note: b*are the Concept based questions like Tactile diagram/data interpretation/case base study for visually Impaired Child**

## CLASS XII

## COURSE CONTENT

| Unit No. | Unit Name & Topics | Specific Learning Objectives | Suggested Teaching Learning process | Learning Outcomes with specific competencies |
|---|---|---|---|---|
| **Unit 1** | **Management of Sporting Events**<br>1. Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling)<br>2. Various Committees & their Responsibilities (pre; during & post)<br>3. Fixtures and their Procedures – Knock- Out (Bye & Seeding) & League (Staircase, Cyclic, Tabular method) and Combination tournaments<br>4. Intramural & Extramural tournaments – Meaning, Objectives & Its Significance<br>5. Community sports program (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity) | • To make the students understand the need and meaning of planning in sports, committees, and their responsibilities for conducting the sports event or tournament.<br>• To teach them about the different types of tournaments and the detailed procedure of drawing fixtures for Knock Out, League Tournaments, and Combination tournaments.<br>• To make the students understand the need for the meaning and significance of intramural and extramural tournaments<br>• To teach them about the different types of community sports and their importance in our society. | • Lecture-based instruction,<br>• Technology-based learning,<br>• Group learning,<br>• Individual learning,<br>• Inquiry-based learning,<br>• Kinesthetic learning,<br>• Game-based learning and<br>• Expeditionary learning. | **After completing the unit, the students will be able to:**<br>* Describe the functions of Sports Event management<br>* Classify the committees and their responsibilities in the sports event<br>* Differentiate the different types of tournaments.<br>* Prepare fixtures of knockout, league & combination.<br>* Distinguish between intramural and extramural sports events<br>* Design and prepare different types of community |

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| **Unit 2** | **Children & Women in Sports**<br>1. Exercise guidelines of WHO for different age groups.<br>2. Common postural deformities- knock knees, flat foot, round shoulders, Lordosis, Kyphosis, Scoliosis, and bow legs and their respective corrective measures.<br>3. Women's participation in Sports- Physical, Psychological , and social benefits.<br>4. Special consideration (menarche and menstrual dysfunction)<br>5. Female athlete triad (osteoporosis, amenorrhea, eating disorders | • To make students understand the exercise guidelines of WHO for different age groups<br>• To make students aware of the common postural deformities<br>• To make students aware of women's sports participation in India and about the special conditions of women<br>• To make students understand menarche and menstrual dysfunction among women athletes.<br>• To make them understand about female athlete triad. | • Lecture-based instruction,<br>• Technology-based learning,<br>• Group learning,<br>• Individual learning,<br>• Inquiry-based learning,<br>• Kinesthetic learning,<br>• Game-based learning and<br>• Expeditionary learning | **After completing the unit, the students will be able to:**<br>• Differentiate exercise guidelines for different stages of growth and development.<br>• Classify common postural deformities and identify corrective measures.<br>• Recognize the role and importance of sports participation of women in India.<br>• Identify special considerations relate to menarche and menstrual dysfunction.<br>• Express female athlete triad according to eating disorders |

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| **Unit 3** | **Yoga as Preventive measure for Lifestyle Disease**<br><br>1. **Obesity:** Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottanasana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama<br>2. **Diabetes:**. Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana,Bhujangasana, Shalabhasana ,Dhanurasana Supta-vajarasana, Paschimottanasan-a, Ardha-Mastendrasana, Mandukasana, | • To make students Understand about the main life style disease - Obesity, Hypertension, Diabetes, Back Pain and Asthma.<br>• To teach about different Asanas in detail which can help as a preventive Measures for those Lifestyle Diseases. | • Lecture-based instruction,<br>• Technology-based learning,<br>• Group learning,<br>• Individual learning,<br>• Inquiry-based learning,<br>• Kinesthetic learning,<br>• Game-based learning and<br>• Expeditionary learning. | **After completing the unit, the students will be able to:**<br>* Identify the asanas beneficial for different ailments and health problems.<br>* Recognize importance of various asanas for preventive measures of obesity, diabetes, asthma, hypertension, back pain and arthritis<br>* Describe the procedure for performing a variety of asanas for maximal benefits.<br>* Distinguish the contraindications associated with performing different asanas.<br>* Outline the role of yogic management for various health benefits and preventive measures. |

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| | Gomukasana, Yogmudra, Ushtrasana, Kapalabhati<br>3. **Asthma:** Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, UttanMandukasan-a, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, Gomukhasana Matsyaasana, Anuloma-Viloma<br>4. **Hypertension**: Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana, UttanMandukasan-a, Vakrasana, Bhujangasana, Makarasana, Shavasana, | | | |

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| | Nadi-shodhanapranayam, Sitlipranayam<br>5. **Back Pain and Arthritis:** Procedure, Benefits & Contraindications of Tadasan, Urdhawahastootansana, Ardh-Chakrasana, Ushtrasana, Vakrasana, Sarala Maysyendrsana, Bhujangasana, Gomukhasana, Bhadrasana, Makarasana, Nadi-Shodhana pranayama. | | | |

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| **Unit 4** | **Physical Education and Sports for CWSN (Children with Special Needs - Divyang)**<br>1. Organizations promoting Disability Sports (Special Olympics; Paralympis; Deaflympics)<br>2. Concept of Classification and Divisioning in Sports.<br>3. Concept of Inclusion in sports, its need, and Implementation;<br>4. Advantages of Physical Activities for children with special needs.<br>5. Strategies to make Physical Activities assessable for children with special needs. | • To make students understand the concept of Disability and Disorder.<br>• To teach students about the types of disabilities & disorders, their causes, and their nature.<br>• To make them aware of Disability Etiquette.<br>• To make the students Understand the advantage of physical activity for CWSN.<br>• To make the students aware of different strategies for making physical activity accessible for Children with Special Needs | ▪ Lecture-based instruction,<br>▪ Technology-based learning,<br>▪ Group learning,<br>▪ Individual learning,<br>▪ Inquiry-based learning,<br>▪ Kinesthetic learning,<br>▪ Game-based learning and<br>• Expeditionary learning | **After completing the unit, the students will be able to:**<br>* Value the advantages of physical activities for children with special needs<br>* Differentiate between methods of categorization in sports for CWSN<br>* Understand concepts and the importance of inclusion in sports<br>* Create advantages for Children with Special Needs through Physical Activities<br>* Strategies physical activities accessible for children with specialneeds |

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| **Unit 5** | **Sports & Nutrition**<br>1. Concept of balanced diet and nutrition<br>2. Macro and Micro Nutrients: Food sources & functions<br>3. Nutritive & Non-Nutritive Componen ts of Diet<br>4. Eating for Weight control – A Healthy Weight, The Pitfalls of Dieting, Food Intolerance, and Food Myths<br>5. Importance of Diet in Sports- Pre, During and Post competition Requirements | • To make the students understand the importance of a balanced diet<br>• To clear the concept of Nutrition – Micro & Macro nutrients, Nutritive & non-Nutritive Components of diet<br>• To make them aware of eating for weight loss and the results of the pitfalls of dieting.<br>• To understand food intolerance & food myths | • Lecture-based instruction,<br>• Technology-based learning,<br>• Group learning,<br>• Individual learning,<br>• Inquiry-based learning,<br>• Kinesthetic learning,<br>• Game-based<br>• learning and<br>• Expeditionary learning. | **After completing the unit, the students will be able to:**<br>* Understand the concept of a balanced diet and nutrition. Classify Nutritive and Non- Nutritive components of the Diet<br>* Identify the ways to maintain a healthy weight<br>* Know about foods commonly causing food intolerance<br>* Recognize the pitfalls of dieting and food myths |
| **Unit 6** | **Test & Measurement in Sports**<br>1. Fitness Test – SAI Khelo India Fitness Test in school: | • To make students Understand and conduct SAI KHELO INDIA Fitness Test and to make students Understand and conduct General MotorFitness Test | • Lecture-based instruction,<br>• Technology-based learning,<br>• Group learning,<br>• Individual learning,<br>• Inquiry-based learning,<br>• Kinesthetic | **After completing the unit, the students will be able to:**<br>* Perform SAI Khelo India Fitness Test in school [Age group 5-8 |

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| | Age group 5-8 years/ class 1-3: BMI, Flamingo Balance Test, Plate Tapping Test<br><br>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).<br><br>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<br><br>3. Computing Basal Metabolic Rate (BMR)<br><br>4. Rikli & Jones - Senior Citizen Fitness Test<br>○ Chair Stand Test for lower body strength<br>○ Arm Curl Test for upper body strength | • To make students to determine physical fitness Index through Harvard Step Test/Rockport Test<br><br>• To make students to calculate Basal Metabolic Rate (BMR)<br><br>• To measure the fitness level of Senior Citizens through Rikli and Jones Senior Citizen Fitness Test. | learning,<br>• Game-based learning and Expeditionary learning | years/ (class 1-3) and Age group 9-18yrs/ (class 4-12)<br><br>* Determine physical fitness Index through Harvard Step Test/Rock- port Test<br><br>* Compute Basal Metabolic Rate (BMR)<br><br>* Describe the procedure of Rikli and Jones - Senior Citizen Fitness Test |

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| | ○ Chair Sit & Reach Test for lower body flexibility<br>○ Back Scratch Test for upper body flexibility<br>○ Eight Foot Up & Go Test for agility<br>○ Six-Minute Walk Test for Aerobic Endurance<br>5. Johnsen – Methney Test of Motor Educability (Front Roll, Roll, Jumping Half-Turn, Jumping full-turn | | | |
| **Unit 7** | **Physiology & Injuries in Sport**<br><br>1. Physiological factors determining components of physical fitness<br><br>2. Effect of exercise on the Muscular System<br><br>3. Effect of exercise on the Cardio-Respiratory System<br>4. Physiological changes due to aging | • Understanding the physiological factors determining the<br>• components of physical fitness.<br><br>• Learning the effects of exercises on the Muscular system.<br><br>• Learning the effects of exercises on Cardiovascular system.<br>• Learning the effects of exercises on the Respiratory system. | • Lecture-based instruction,<br>• Technology-based learning,<br>• Group learning,<br>• Individual learning,<br>• Inquiry-based learning,<br>• Kinesthetic learning,<br>• Game-based learning and<br>• Expeditionary learning | **After completing the unit, the students will be able to:**<br>* Recognize the physiological factors determining the components of physical fitness.<br><br>* Comprehend the effects of exercise on the Muscular system and cardiorespiratory systems.<br><br>* Figure out the physiological changes due to ageing |

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| | 5. Sports injuries: Classification (Soft Tissue Injuries - Abrasion, Contusion, Laceration, Incision, Sprain & Strain Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted) | • Learning the changes caused due to aging.<br>• Understanding the Sports Injuries (Classification, Causes, and Prevention)<br>• Understanding the Aims & Objectives of First Aid<br>• Understanding the Management of Injuries | | • Classify sports injuries with its Management. |
| **Unit 8** | **Biomechanics and Sports**<br>1. Newton's Law of Motion & its application in sports<br>2. Types of Levers and their application in Sports.<br>3. Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports<br>4. Friction & Sports<br>5. Projectile in Sports | • Understanding Newton's Laws of Motion and their Application in Sports.<br>• Make students understand the lever and its application in sports.<br>• Make students understand the concept of Equilibrium and its application in sports.<br>• Understanding Friction in Sports.<br>• Understanding the concept of Projectile in sports. | • Lecture-based instruction,<br>• Technology-based learning,<br>• Group learning,<br>• Individual learning,<br>• Inquiry-based learning,<br>• Kinesthetic learning,<br>• Game-based learning and<br>• Expeditionary learning | **After completing the unit, the students will be able to:**<br>* Understand Newton's Law of Motion and its application in sports<br>* Recognize the concept of Equilibrium and its application in sports.<br>* Know about the Centre of Gravity and will be able to apply it in sports<br>* Define Friction and application in sports.<br>* Understand the concept of Projectile in sports. |

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| **Unit 9** | **Psychology and Sports**<br><br>1. Personality; its definition & types (Jung Classification & Big Five Theory)<br><br>2. Motivation, its type & techniques.<br><br>3. Exercise Adherence: Reasons, Benefits & Strategies for Enhancing it<br><br>4. Meaning, Concept & Types of Aggressions in Sports<br><br>5. Psychological Attributes in Sports – Self-Esteem, Mental Imagery, Self-Talk, Goal Setting | • To make students understand Personality & its classifications.<br><br>• To make students understand motivation and its techniques.<br><br>• To make students about Exercise Adherence and Strategies for enhancing Adherence to Exercise.<br><br>• To make them aware of Aggression in sports and types.<br><br>• To make students understand Psychological Attributes in Sports. | • Lecture-based instruction,<br>• Technology-based learning,<br>• Group learning,<br>• Individual learning,<br>• Inquiry-based learning,<br>• Kinesthetic learning,<br>• Game-based learning and<br>• Expeditionary learning | **After completing the unit, the students will be able to:**<br><br>* Classify different types of personality and their relationship with sports performance.<br><br>* Recognise the concept of motivation and identify various types of motivation.<br><br>* Identify various reasons to exercise, its associated benefits and strategies to promote exercise adherence.<br><br>* Differentiate between different types of aggression in sports.<br><br>* Explain various psychological attributes in sports. |
| **Unit 10** | **Training in Sports**<br>1. Concept of Talent Identification and Talent Development in Sports | • Making the students understand the concept of talent identification and methods in sports<br>• Making the students Understand sports | • Lecture-based instruction,<br>• Technology-based learning, Group learning,<br>• Individual learning,<br>• Inquiry-based learning, | **After completing the unit, the students will be able to:**<br>• understand the concept of talent identification and methods used |

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| | 2. Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle.<br><br>3. Types & Methods to Develop – Strength, Endurance, and Speed.<br><br>4. Types & Methods to Develop – Flexibility and Coordinative Ability.<br><br>5. Circuit Training - Introduction & its importance | training and the different cycle in sports training.<br><br>• Making the students Understand different types & methods of strengths,<br>• endurance, and speed.<br><br>• Making the students Understand different types & methods of flexibility and<br>• coordinative ability.<br><br>• Making the students understand Circuit training and its importance | • kinesthetic learning,<br>• Game-based learning and<br>• Expeditionary learning | for talent development in sports.<br><br>• Understand sports training and the different cycle used in the training process.<br><br>• Understand different types & methods to develop - strength, endurance, and speed in sports training<br><br>• Understand different types & methods to develop – flexibility and coordinative ability.<br><br>• Understand Circuit training and its importance |

## GUIDELINES FOR INTERNAL ASSESSMENT

## (PRACTICAL/ PROJECTS ETC.)

| PRACTICAL | (Max. Marks 30) |
|---|---|
| Physical Fitness Test: SAI Khelo India Test, Brockport Physical Fitness Test (BPFT)* | 6 Marks |
| Proficiency in Games and Sports (Skill of any one IOA recognized Sport/Game of Choice)** | 7 Marks |
| Yogic Practices | 7 Marks |
| Record File *** | 5 Marks |
| Viva Voce (Health/ Games & Sports/ Yoga) | 5 Marks |

- *Test for CWSN (any 4 items out of 27 items. One item from each component: Aerobic Function, Body Composition, Muscular strength & Endurance, Range of Motion or Flexibility)
- **CWSN (Children With Special Needs – Divyang): Bocce/Boccia , Sitting Volleyball, Wheel Chair Basketball, Unified Badminton, Unified Basketball, Unified Football, Blind Cricket, Goalball, Floorball, Wheel Chair Races and Throws, or any other Sport/Game of choice.
- **Children with Special Needs can also opt any one Sport/Game from the list as alternative to Yogic Practices. However, the Sport/Game must be different from Test - 'Proficiency in Games and Sports'

***Record File shall include:**

- **Practical-1:** Fitness tests administration. (SAI Khelo India Test)
- **Practical-2:** Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.
- **Practical-3:** Anyone one IOA recognized Sport/Game of choice. Labelled diagram of Field & Equipment. Also, mention its Rules, Terminologies & Skills.

## PRESCRIBED TEXTBOOKS (CLASS XI & XII)

CBSE Physical Education Class XI Text Book
**https://cbseacademic.nic.in//web_material/Manuals/PhysicalEducation11_2022.pdf**

CBSE Physical Education Class XII Text Book
**https://cbseacademic.nic.in/web_material/Manuals/PhysicalEducation12_2022.pdf**

**COURSE STRUCTURE**
**CLASS XII (2025-2026)**
**Theory Paper**

**Time : 3 Hours** **Marks: 70**

| Units | Topics | Marks |
|---|---|---|
| I | Variations in Psychological Attributes | 13 |
| II | Self and Personality | 13 |
| III | Meeting Life Challenges | 9 |
| IV | Psychological Disorders | 12 |
| V | Therapeutic Approaches | 9 |
| VI | Attitude and Social Cognition | 8 |
| VII | Social Influence and Group Processes | 6 |
| | **Total** | **70** |

**COURSE CONTENT**

| | |
|---|---|
| **Unit I** | **Variations in Psychological Attributes**<br>*The topics in this unit are:*<br>1. Introduction<br>2. Individual Differences in Human Functioning<br>3. Assessment of Psychological Attributes<br>4. Intelligence<br>5. Psychometric Theories of Intelligence, Information Processing Theory: Planning, Attention-arousal and Simultaneous successive Model of Intelligence, Triarchic Theory of Intelligence; Theory of Multiple Intelligences.<br>6. Individual Differences in Intelligence<br>7. Culture and Intelligence<br>8. Emotional Intelligence<br>9. Special Abilities: Aptitude: Nature and Measurement<br>10. Creativity |
| **Unit II** | **Self and Personality**<br>*The topics in this unit are:*<br>1. Introduction<br>2. Self and Personality<br>3. Concept of Self<br>4. Cognitive and Behavioural aspects of Self<br>5. Culture and Self<br>6. Concept of Personality<br>7. Major Approaches to the Study of Personality |

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|---|---|
| | • Type Approaches<br>• Trait Approaches<br>• Psychodynamic Approach and Post Freudian Approaches<br>• Behavioural Approach<br>• Cultural Approach<br>• Humanistic Approach<br>8. Assessment of Personality<br>• Self-report Measures<br>• Projective Techniques<br>• Behavioural Analysis |
| **Unit III** | **Meeting Life Challenges**<br>*The topics in this unit are:*<br>1. Introduction<br>2. Nature, Types and Sources of Stress<br>3. Effects of Stress on Psychological Functioning and Health<br>• Stress and Health<br>• General Adaptation Syndrome<br>• Stress and Immune System<br>• Lifestyle<br>4. Coping with Stress<br>• Stress Management Techniques<br>5. Promoting Positive Health and Well-being<br>• Life Skills<br>• Positive Health |
| **Unit IV** | **Psychological Disorders**<br>*The topics in this unit are:*<br>1. Introduction<br>2. Concepts of Abnormality and Psychological Disorders<br>• Historical Background<br>3. Classification of Psychological Disorders<br>4. Factors Underlying Abnormal Behaviour<br>5. Major Psychological Disorders<br>• Anxiety Disorders<br>• Obsessive-Compulsive and Related Disorders<br>• Trauma-and Stressor-Related Disorders<br>• Somatic Symptom and Related Disorders<br>• Dissociative Disorders<br>• Depressive Disorder<br>• Bipolar and Related Disorders |

| | |
|---|---|
| | • Schizophrenia Spectrum and Other Psychotic Disorders<br>• Neurodevelopmental Disorders<br>• Disruptive, Impulse-Control and Conduct Disorders<br>• Feeding and Eating Disorders<br>• Substance Related and Addictive Disorders |
| **Unit V** | **Therapeutic Approaches**<br>*The topics in this unit are:*<br>1. Nature and Process of psychotherapy<br>• Therapeutic relationship<br>2. Types of Therapies<br>• Behaviour Therapy<br>• Cognitive Therapy<br>• Humanistic-Existential Therapy<br>• Alternative Therapies<br>• Factors contributing to healing in Psychotherapy<br>• Ethics in Psychotherapy<br>3. Rehabilitation of the Mentally Ill |
| **Unit VI** | **Attitude and Social Cognition**<br>*The topics in this unit are:*<br>1. Introduction<br>2. Explaining Social Behaviour<br>3. Nature and Components of Attitudes<br>4. Attitude Formation and Change<br>• Attitude Formation<br>• Attitude Change<br>• Attitude-Behaviour Relationship<br>5. Prejudice and Discrimination<br>6. Strategies for Handling Prejudice |
| **Unit VII** | **Social Influence and Group Processes**<br>*The topics in this unit are:*<br>1. Introduction<br>2. Nature and Formation of Groups<br>3. Type of Groups<br>4. Influence of Group on Individual Behaviour<br>• Social Loafing<br>• Group Polarisation |

**Practical** **30 Marks**

A. Development of case profile:
Using appropriate methods like interview, observation & psychological tests.

B. Test administration:
Students are required to administer and interpret five psychological tests related to various psychological attributes like intelligence, aptitude, attitude, personality, etc.

C. In the Practical examination, the student will be required to administer and interpret two psychological tests.

**Distribution of Marks:**

| | |
|---|---|
| • Practical File and Case Profile | 10 Marks |
| • Viva Voce (Case Profile & Two psychological tests) | 05 Marks |
| • Two tests (5 marks for conducting the tests and 10 marks for reporting) | 15 Marks |
| **Total** | **30 Marks** |

## QUESTION PAPER DESIGN
## CLASS – XII (2025-26)

**I. Theory : 70 Marks**

| **Time: 3 Hours** | | **Maximum Marks: 70** | |
|---|---|---|---|
| **S. No.** | **Competencies** | **Total Marks** | **% Weightage** |
| 1 | **Remembering and Understanding:** Exhibiting memory of previously learned material by recalling facts, terms, basic concepts, and answers; Demonstrating understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas | 35 | 50% |
| 2 | **Applying:** Solving problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way | 25 | 35% |
| 3 | **Formulating, Analysing, Evaluating and Creating:** Examining and breaking information into parts by identifying motives or causes; Making inferences and finding evidence to support generalizations; Presenting and defending opinions by making judgments about information, validity of | 10 | 15% |

| | | | |
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| | ideas, or quality of work based on a set of criteria; Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions | | |
| | **Total** | **70** | **100%** |

**II. Practical: 30 Marks**

# CBSE | DEPARTMENT OF SKILL EDUCATION

# CURRICULUM FOR SESSION 2025-2026

## YOGA (SUBJECT CODE - 841)

### CLASS – XII

**COURSE OVERVIEW:**

In view of today's global problems, the course of yoga is compulsory, as mental and physical stress is increasing everywhere, students will benefit from this course. Just as the word yoga means to connect, the students will also have loyalty and engagement towards their duty towards society and our society will move towards a positive thinking.

WHO has also emphasized the role of yoga in prevention therapy. For this reason, the popularity of yoga will increase globally.

Yoga is a new topic for the international community, which is why the world is trying to understand yoga more. For this reason, yoga has very good opportunities internationally.

**OBJECTIVES OF THE COURSE:**

Following are the main objectives of this course.

- To enable the student to have good health.
- To practice mental hygiene.
- To possess emotional stability.
- To integrate moral values.
- To attain higher level of consciousness.

**SALIENT FEATURES:**

- Yoga course is cost effective.
- Another very important feature for this course is that students of all category can do this course very easily

## LIST OF EQUIPMENT AND MATERIALS:

The items required for the course are as follows:

**Teaching/Training Aids:**

- Computer (optional)
- Sutra Neti
- Rubber Neti
- Jalneti
- Jalneti pot
- Vastra Dhoti
- Soap
- Tratak stand
- Candle
- Yoga Mat

## CAREER OPPORTUNITIES:

- Yoga teacher
- Yoga therapist
- Resource officer in yoga
- Yoga instructor
- Naturopathy Doctor

## VERTICAL MOBILITY:

After, following career options are available in field:

- Paramedical physiotherapist
- Fitness trainer
- Aerobic or Zumba trainer

## CURRICULUM:

This course is a planned sequence of instructions consisting of Units meant for developing employability and skills competencies of students of Class XII opting for the subject along with other subjects.

# YOGA (SUBJECT CODE - 841)

# CLASS – XII (SESSION 2025-2026)

## Total Marks: 100 (Theory - 50 + Practical - 50)

| | UNITS | NO. OF HOURS for Theory and Practical | MAX. MARKS for Theory and Practical |
|---|---|---|---|
| Part A | **Employability Skills** | | |
| | Unit 1: Communication Skills-IV | 13 | 2 |
| | Unit 2: Self-Management Skills-IV | 07 | 2 |
| | Unit 3: ICT Skills-IV | 13 | 2 |
| | Unit 4: Entrepreneurial Skills-IV | 10 | 2 |
| | Unit 5: Green Skills-IV | 07 | 2 |
| | **Total** | **50** | **10** |
| Part B | **Subject Specific Skills** | | |
| | Unit 1 – Introduction to Yoga and Yogic Practices – II | 25 | 12 |
| | Unit 2 – Introduction to Yoga Texts - II | 40 | 12 |
| | Unit 3 – Yoga for Health Promotion - II | 40 | 16 |
| | **Total** | **105** | **40** |
| Part C | **Practical Work** | | |
| | Project | 105 | 10 |
| | Viva | | 05 |
| | Practical File | | 15 |
| | Demonstration of skill competency via Lab Activities | | 20 |
| | **Total** | **105** | **50** |
| | **GRAND TOTAL** | **260** | **100** |

# DETAIL OF THE UNITS OF CLASS - XII

## Total Marks: 100 (Theory - 50 + Practical - 50)

### PART-A: EMPLOYABILITY SKILLS

| S. No. | Units | Duration (in Hours) |
|---|---|---|
| 1. | Unit 1: Communication Skills- IV | 13 |
| 2. | Unit 2: Self-management Skills- IV | 07 |
| 3. | Unit 3: Information and Communication Technology Skills-IV | 13 |
| 4. | Unit 4: Entrepreneurial Skills- IV | 10 |
| 5. | Unit 5: Green Skills- IV | 07 |
| | **TOTAL DURATION** | **50** |

**Note: - The detailed curriculum/ topics to be covered under Part A: Employability Skills can be downloaded from CBSE website**

### PART-B – SUBJECT SPECIFIC SKILLS

- Unit 1 – Introduction to Yoga and Yogic Practices – II
- Unit 2 – Introduction to Yoga Texts - II
- Unit 3 – Yoga for Health Promotion – II

#### UNIT 1 – INTRODUCTION TO YOGA AND YOGIC PRACTICES – II

- Shatkarma meaning, purpose and their significance in yoga sadhana
- Yogasana - meaning, principal and their health benefit.
- Introduction to Pranayama and Dhyana and their health benefits.
- Identify career opportunities in Yoga

#### UNIT 2 – INTRODUCTION TO YOGA TEXTS - II

- Concepts of Aahara (Diet) according yogic text.
- Significance of Hath Yoga practices in Health promotion.
- Concept of mental health well-being according to patanjali Yoga
- Yogic practice of Patanjali yoga: Bahiranga and Antranga Yoga
- Concept of healthy living style in Bhagavad Gita
- Importance of subjective experience in daily yoga practice

#### UNIT 3 – YOGA FOR HEALTH PROMOTION - II

- Introduction to first aid and CPR
- Yogic management of stress and its consequences
- Yogic prevention of common diseases
- Yoga and personality development

# PRACTICAL GUIDELINES FOR CLASS - XII

## Assessment of performance:

The two internal examiners, assigned for the conduct and assessment of Practical Examinations each in **Senior Secondary School Curriculum (Under NSQF).** Question for the viva examinations should be conducted by two examiners (one internal and one external). Question to be more of General nature, project work or the curriculum. Investigatory Project especially those that show considerable amount of effort and originality, on the part of the student, should get suitable high marks, while project of a routine or stereotyped nature should only receive MEDIOCRE marks.

## Procedure for Record of Marks in the Practical answer-books:

The examiner will indicate separately marks of practical examination on the title page of the answer-books under the following heads:

### Project – 10 marks

Projects for the final practical is given below. Student may be assigned

### Viva based on Project - 05 marks

The teacher conducting the final practical examination may ask verbal questions related to the project, if any, done by the student. Alternatively, if no project has been assigned to the students, viva may be based on questions of practical nature from the field of subject as per the Curriculum

### Practical File - 15 Marks

Students to make a power point presentation / assignment / practical file / report. Instructor shall assign them any outlet to study the elements in Yoga.

**Suggested list of Practical –**

1. Repetition of Asana of class XI
2. Practice of Tadasana
3. Practice of ArdhaChakrasana
4. Practice of Katichakrasana
5. Practice of Dandasana
6. Practice of Bhadrasana
7. Practice of Padamasana
8. Practice of Vajrasana
9. Practice of Utanmandukasana
10. Practice of kakasana
11. Practice of Parvatasana
12. Practice of Makrasana
13. Practice of Uttanpadasana
14. Practice of Setubandhasana
15. Practice of Vipritkarniasana
16. Practice of Saral matsyasana
17. Practice of Shavasana
18. Repetition of Pranayam of class XI
19. Practice of Jalandhar and Uddayan Bandh
20. Repetition of Mudras of class XI
21. Practice of breath Meditation and OM Dhyan

**Demonstration of skill competency in Lab Activities -20 marks**

**Guidelines for Project Preparation:**

The final project work should encompass chapters on:

a. Introduction,
b. Identification of core and advance issues,
c. Learning and understanding and
d. Observation during the project period.