COURSE STRUCTURE

CLASS XII (2025 - 26)

(THEORY)

Time: 03 Hours **Max. Marks: 70**

Unit	Title	Marks
VI	Reproduction	16
VII	Genetics and Evolution	20
VIII	Biology and Human Welfare	12
IX	Biotechnology and its Applications	12
X	Ecology and Environment	10
	Total	70

Unit-VI Reproduction

Chapter-1: Sexual Reproduction in Flowering Plants

Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; out breeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.

Chapter-2: Human Reproduction

Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis -spermatogenesis and oogenesis; menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).

Chapter-3: Reproductive Health

Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control - need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary idea for general awareness).

Unit-VII Genetics and Evolution

Chapter-4: Principles of Inheritance and Variation

Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes; Sex determination - in humans, birds and honey bee; linkage and crossing over; sex linked inheritance - haemophilia, colour blindness; Mendelian disorders in humans - thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

Chapter-5: Molecular Basis of Inheritance

Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central Dogma; transcription, genetic code, translation; gene expression and regulation - lac operon; Genome, Human and rice genome projects; DNA fingerprinting.

Chapter-6: Evolution

Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy- Weinberg's principle; adaptive radiation; human evolution.

Unit-VIII: Biology and Human Welfare

Chapter-7: Human Health and Diseases

Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology - vaccines; cancer, HIV and AIDS; Adolescence - drug and alcohol abuse.

Chapter-8: Microbes in Human Welfare

Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use.

Unit-IX Biotechnology and its Applications

Chapter-9: Biotechnology - Principles and Processes

Genetic Engineering (Recombinant DNA Technology).

Chapter-10: Biotechnology and its Applications

Application of biotechnology in health and agriculture: Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organisms - Bt crops; transgenic animals; biosafety issues, biopiracy and patents.

Unit-X Ecology and Environment

Chapter-11: Organisms and Populations

Population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution.

Chapter-12: Ecosystem

Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy.

Chapter-13: Biodiversity and its Conservation

Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.

PRACTICALS

Time allowed: 3 Hours **Max. Marks: 30**

<table>
<tr><th colspan="3">Evaluation Scheme</th><th>Marks</th></tr>
<tr><td colspan="2">One Major Experiment</td><td>5</td><td>5</td></tr>
<tr><td colspan="2">One Minor Experiment</td><td>2 & 3</td><td>4</td></tr>
<tr><td colspan="2">Slide Preparation</td><td>1 & 4</td><td>5</td></tr>
<tr><td colspan="3">Spotting</td><td>7</td></tr>
<tr><td>Practical Record + Viva Voce</td><td rowspan="2">(Credit to the student's work over the academic session may be given)</td><td rowspan="2"></td><td>4</td></tr>
<tr><td>Investigatory Project and its Project Record + Viva Voce</td><td>5</td></tr>
<tr><td colspan="3">Total</td><td>30</td></tr>
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A. List of Experiments

1. Prepare a temporary mount to observe pollen germination.
2. Study the plant population density by quadrat method.
3. Study the plant population frequency by quadrat method.
4. Prepare a temporary mount of onion root tip to study mitosis.
5. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, banana etc.

B. Study and observe the following (Spotting):

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

Practical Examination for Visually Impaired Students of Classes XI and XII

Evaluation Scheme

Time: 02 Hours **Max. Marks: 30**

Topic	Marks
Identification/Familiarity with the apparatus	5
Written test (Based on given / prescribed practicals)	10
Practical Records	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 paper 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.

Class XII

A. Items for Identification/ familiarity with the apparatus for assessment in practicals (All experiments) Beaker, flask, petriplates, soil from different sites - sandy, clayey, loamy, small potted plants, aluminium foil, paint brush, test tubes, starch solution, iodine, ice cubes, Bunsen burner/spirit lamp/water bath, large flowers, Maize inflorescence, model of developmental stages highlighting morula and blastula of frog, beads/seeds of different shapes/size/texture *Ascaris*, Cactus/*Opuntia* (model).

B. List of Practicals

1. Study of flowers adapted to pollination by different agencies (wind, insects).
2. Identification of T.S of morula or blastula of frog (Model).
3. Study of Mendelian inheritance pattern using beads/seeds of different sizes/texture.
4. Preparation of pedigree charts of genetic traits such as rolling of tongue, colour blindness.
5. Study of emasculation, tagging and bagging by trying out an exercise on controlled pollination.

6. Identify common disease causing organisms like *Ascaris* (model) and learn some common symptoms of the disease that they cause.
7. Comment upon the morphological adaptations of plants found in xerophytic conditions.

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

Prescribed Books:

1. Biology, Class-XII, Published by NCERT.
2. Other related books and manuals brought out by NCERT (consider multimedia also).
3. Biology Supplementary Material (Revised). Available on CBSE website.

Question Paper Design (Theory)

Class XII (2025 -26)

Biology (044)

Competencies	Total
Demonstrate Knowledge and Understanding	50 %
Application of Knowledge / Concepts	30 %
Analyse, Evaluate and Create	20 %

Note:

- Typology of questions: VSA including MCQs, Assertion – Reasoning type questions; SA; LA-I; LA-II; Source-based/ Case-based/ Passage-based/ Integrated assessment questions.
- An internal choice of approximately 33% would be provided.

Suggestive verbs for various competencies

- **Demonstrate, Knowledge and Understanding**
  State, name, list, identify, define, suggest, describe, outline, summarize, etc.
- **Application of Knowledge/Concepts**
  Calculate, illustrate, show, adapt, explain, distinguish, etc.
- **Analyze, Evaluate and Create**
  Interpret, analyse, compare, contrast, examine, evaluate, discuss, construct, etc.

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.
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- 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:** 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:** Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	21	30
3	**Analysing, Evaluating and Creating:** 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. 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.

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.

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 • Listening • Speaking	**10** 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 • Shows hardly any initiative in the development of conversation • Very limited interaction	• Contributions are often unrelated to those of the other speaker • Generally passive in the development of conversation	• Develops interaction adequately, makes however minimal effort to initiate conversation • Needs constant prompting to take turns	• Interaction is adequately initiated and developed • Takes turn but needs some prompting	• Initiates & logically develops simple conversation on familiar topics • 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 • Links only basic sentences; breakdown of coherence evident	fluently, but loses coherence in complex communication • Often hesitates and/or resorts to slow speech • Topics partly developed; not always concluded logically	noticeable • Hesitates and/or self corrects; occasionally loses coherence • Topics developed, but usually not logically concluded	• Demonstrates hesitation to find words or use correct grammatical structures and/or self-correction • Topics not fully developed to merit.	hesitation Develops topic fully & coherently
Pronunciation	• Frequent inaccurate pronunciation • Communication is severely affected	• Frequently unintelligible articulation • Frequent phonological errors • Major communication problems	• Largely correct pronunciation &clear articulation except occasional errors	• Mostly correct pronunciation & clear articulation • Is clearly understood most of the time;very few phonological errors	• Pronounces correctly & articulates clearly • Is always comprehensible • uses appropriate intonation
Vocabulary & Grammar	• Demonstrates almost no flexibility, and mostly struggles for appropriate words • Many Grammatical errors impacting communication	• Is able to communicate on some of the topics, with limited vocabulary. • 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 • 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 • 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:

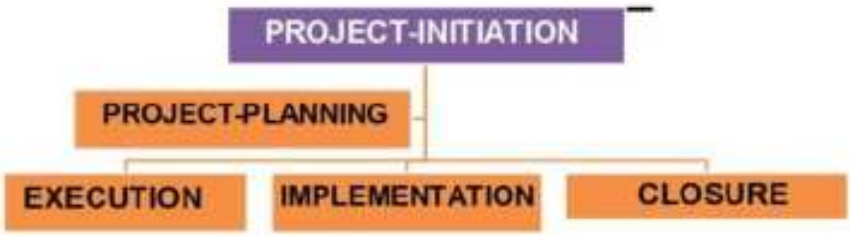
- Cover page, with title of project, school details/details of students.
- Statement of purpose/objectives/goals
- Certificate of completion under the guidance of the teacher.
- Students Action Plan for the completion of assigned tasks.
- Materials such as scripts for the theatre/role play, questionnaires 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 **Preferably till November-December**	• Teachers plan a day to orient students about the ALS projects, details are shared with all stakeholders. • Students choose a project, select team members and develop project- plan. • Group meets (preferably online) and reports to the team leader about the progress: shortfalls and successes are detailed. • Team leader apprises teacher-mentor. • Students working individually or in pairs also update the teachers. • A logical, deliverable and practical plan is drafted by the team/ pair/individual. Goals/objectives are clearly defined for all. • Work is delegated to team members by the team leader. Students wishing to work alone develop their own plan of Action. • Detailed project schedules are shared with the teacher.
December- January	• Suggestions and improvements are shared by the teacher, wherever necessary. • Group members coordinate and keep communication channels open for interaction. • Gaps (if any) are filled with the right skill sets by the Team Leader/ individual student. • 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

CBSE | DEPARTMENT OF SKILL EDUCATION

CURRICULUM FOR SESSION 2025-2026

ARTIFICIAL INTELLIGENCE (SUB. CODE - 843)

JOB ROLE: AI Assistant

CLASS – XII

OBJECTIVES OF THE COURSE:

Artificial Intelligence (AI) is a transformative field in computer science that focuses on creating intelligent systems capable of learning, adapting, and self-improving. These systems can process vast amounts of data with remarkable speed and accuracy, surpassing human capabilities in many domains. AI's impact extends across disciplines, offering innovative solutions to some of the world's most pressing challenges. From revolutionizing healthcare with advanced diagnostics and personalized treatments to enhancing agricultural practices and ensuring food security, AI has the power to reshape industries. It can improve access to quality education, and play a pivotal role in protecting and restoring our planet's ecosystems by cleaning our oceans, air, and water. The possibilities for leveraging AI to create a better future are boundless, provided we harness its potential responsibly and ethically.

LEARNING OUTCOMES:

By the end of this course, students will:

1. Develop an informed perspective on Artificial Intelligence (AI), enabling them to think critically about its implications for society and the world.
2. Understand the role of Python in AI development and its practical applications.
3. Harness the power of AI using no-code tools like Orange Data Mining to solve complex problems efficiently.
4. Comprehend the significance of Data Science Methodology in a Capstone Project to address real-world challenges.
5. Explore the fundamentals of computer vision and its applications in processing and analyzing digital images and videos, as well as its role in intelligent machines.
6. Delve into the diverse possibilities of Generative AI, including image generation, text synthesis, audio production, and video creation.
7. Understand the structure and components of neural networks, building a foundational knowledge of deep learning.
8. Appreciate the value of storytelling as a powerful tool to communicate ideas, insights, and solutions effectively in the context of AI.

SCHEME OF UNITS:

This course follows a structured sequence of instructional units designed to develop employability and vocational skills among students. These units are carefully crafted to integrate seamlessly with other educational subjects, fostering a holistic learning experience.

CBSE | DEPARTMENT OF SKILL EDUCATION

ARTIFICIAL INTELLIGENCE (SUBJECT CODE - 843)

CLASS – XII (SESSION 2025-2026)

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

	UNITS	NO. OF HOURS		MAX MARKS
PART A	**EMPLOYABILITY SKILLS**			
	Unit 1: Communication Skills-IV	15		2
	Unit 2: Self-Management Skills-IV	10		2
	Unit 3: ICT Skills-IV	15		2
	Unit 4: Entrepreneurial Skills-IV	10		2
	Unit 5: Green Skills-IV	10		2
	TOTAL	**60**		**10**
PART B	**SUBJECT SPECIFIC SKILLS**	**Th.**	**Prac.**	
	Unit 1: Python Programming – II*	6	18	(*to be evaluated in practicals only)
	Unit 2: Data Science Methodology: An Analytic Approach to Capstone Project	8	12	8
	Unit 3: Making Machines See	6	12	6
	Unit 4: AI with Orange Data Mining Tool*	4	18	(*to be evaluated in practicals only)
	Unit 5: Introduction to Big Data and Data Analytics	7	12	6
	Unit 6: Understanding Neural Networks	8	12	8
	Unit 7: Generative AI	6	12	7
	Unit 8: Data Storytelling	5	4	5
	TOTAL	**50**	**100**	**40**
PART C	**PRACTICAL WORK / PROJECT WORK**			
	Capstone Project + Project Documentation (As per the process given in "Project Guidelines", on page 2 of CBSE IBM Projects Cookbook) • Capstone Project =15 Marks • Project Documentation = 6 Marks • Video= 4 Marks			25
	Practical File			10
	Lab Test (Python and Orange Data Mining)			10
	Viva Voce (based on Capstone Project + Practical File)			5
	TOTAL			**50**
	GRAND TOTAL (THEORY + PRACTICAL)			**100**

(NOTE: *marked units/portion is to be evaluated in practicals only)

DETAILED CURRICULUM/TOPICS FOR CLASS XII

Part-A: EMPLOYABILITY SKILLS

S. No.	Units	Duration in Hours
1.	Unit 1: Communication Skills-IV	15
2.	Unit 2: Self-management Skills-IV	10
3.	Unit 3: Information and Communication Technology Skills-IV	15
4.	Unit 4: Entrepreneurial Skills-IV	10
5.	Unit 5: Green Skills-IV	10
	TOTAL	**60**

NOTE: The detailed curriculum/ topics to be covered under Part A: Employability Skills can be downloaded from the CBSE website.

Part-B - SUBJECT SPECIFIC SKILLS

- Unit 1: Python Programming – II*
- Unit 2: Data Science Methodology: An Analytic Approach to Capstone Project
- Unit 3: Making Machines See
- Unit 4: AI with Orange Data Mining Tool*
- Unit 5: Introduction to Big Data and Data Analytics
- Unit 6: Understanding Neural Networks
- Unit 7: Generative AI
- Unit 8: Data Storytelling

(NOTE: *marked units/portion is to be evaluated in practicals only)

UNIT 1: PYTHON PROGRAMMING - II *(to be evaluated in practicals only)

SUB-UNIT	LEARNING OUTCOMES	ACTIVITY/PRACTICALS
• Recap of NumPy library • Recap of Pandas Library • Importing and Exporting Data between CSV Files and DataFrames • Handling missing value • Linear Regression algorithm (**For Advanced Learners)	• Apply the fundamental concepts of the NumPy and Pandas libraries to perform data manipulation and analysis tasks • Import and export data between CSV files and Pandas Data Frames, ensuring data integrity and consistency.	• Import and Export Data between CSV Files and DataFrames • Implement Linear Regression algorithm on Google Colab or any Python IDE. (**For Advanced Learners)

UNIT 2: DATA SCIENCE METHODOLOGY: AN ANALYTIC APPROACH TO CAPSTONE PROJECT

SUB-UNIT	LEARNING OUTCOMES	ACTIVITY/PRACTICALS
• Introduction to Data Science Methodology • Steps for Data Science Methodology • Model Validation Techniques • Model Performance-Evaluation Metrics	• Integrate Data Science Methodology steps into the Capstone Project. • Identify the best way to represent a solution to a problem. • Understand the importance of validating machine learning models • Use key evaluation metrics for various machine learning tasks	• Calculate MSE and RMSE values for the data given using MS Excel • Calculate Precision, Recall, F1 score, and Accuracy from the given confusion matrix • Python Code to Evaluate a Model (*to be evaluated in practicals only)

UNIT 3: MAKING MACHINES SEE

SUB-UNIT	LEARNING OUTCOMES	ACTIVITY/PRACTICALS
• How Machines See • Working of Computer Vision • Computer Vision Process • Applications of Computer Vision • Challenges of Computer Vision • The Future of Computer Vision • Working with OpenCV (**For Advanced Learners)	• Explain computer vision and its significance in visual data analysis. • Understand key stages of computer vision, including acquisition, preprocessing, feature extraction, and analysis. • Identify real-world applications in fields like healthcare, surveillance, and autonomous vehicles. • Analyze challenges such as ethics, privacy, and technical limitations. • Explore future advancements and transformative potential of computer vision. • Develop basic skills in using OpenCV and deploying machine learning models online.	• Binary Art - Recreating Images with 0s and 1s • Creating a Website Containing an ML Model • Working with OpenCV to load, display and resize images (**For Advanced Learners)

UNIT 4: AI WITH ORANGE DATA MINING TOOL (*to be evaluated in practicals only)

SUB-UNIT	LEARNING OUTCOMES	ACTIVITY/PRACTICALS
• What is Data Mining? • Introduction to Orange Data Mining Tool • Beneficiaries of Orange data mining • Getting started with Orange tool • Components of Orange • Default Widget Catalogue • Key domains of AI with ORANGE DATA MINING TOOL	• Develop proficiency in utilizing the Orange Data Mining tool, enabling them to navigate its interface, employ its features, and execute data analysis tasks effectively. • Demonstrate the ability to apply Orange in real-world scenarios across diverse domains of artificial intelligence, including data science, computer vision, and natural language processing (NLP), through hands-on projects and case studies.	• Load and visualize the Iris dataset using Scatter Plot and other widgets. • Use classification widgets • Evaluating the Classification Model with Orange • Computer Vision with Orange • Natural Language Processing with Orange

UNIT 5: INTRODUCTION TO BIG DATA AND DATA ANALYTICS

SUB-UNIT	LEARNING OUTCOMES	ACTIVITY/PRACTICALS
• Introduction to Big Data • Types of Big Data • Advantages and Disadvantages of Big Data • Characteristics of Big Data • Big Data Analytics • Working on Big Data Analytics • Mining Data Streams • Future of Big Data Analytics	• Understanding Big Data, its types, advantages and disadvantages. • Recognize the characteristics of Big Data. • Explain the concept of Big Data Analytics and its significance. • Analyze the future trends in the field of Big Data Analytics. • Understanding the term Mining Data Streams.	*Performing Big Data analytics with Orange Data mining tool. (*to be evaluated in practicals only)

UNIT 6: UNDERSTANDING NEURAL NETWORKS

SUB-UNIT	LEARNING OUTCOMES	ACTIVITY/PRACTICALS
• Parts of a Neural Network • Components of a Neural Network • Working of a Neural Network • Types of Neural Networks • Future of Neural Networks and Societal Impact	• Explain the basic structure and components of a neural network. • Identify different types of neural networks and their respective applications. • Understand machine learning and neural networks through hands-on projects, interactive tools, and Python programming.	• Explore Machine Learning for Kids to create a neural network for identifying animals and birds. • Build a TensorFlow model to convert Celsius to Fahrenheit (*to be evaluated in practicals only) • Use Python Keras to create and train a neural network predicting Fahrenheit from Celsius. (**For Advanced Learners) • Classification problem using TensorFlow playground

UNIT 7: GENERATIVE AI

SUB-UNIT	LEARNING OUTCOMES	ACTIVITY/PRACTICALS
• Introduction to Generative AI • Working of Generative AI • Generative and Discriminative models • Applications of Generative AI • LLM- Large Language Model • Future of Generative AI • Ethical and Social Implications of Generative AI	• How Generative AI works. • Differentiate between Generative AI and Discriminative AI and identify their use cases. • Explore ethical, social, and legal concerns. • Gain hands-on experience using AI tools to generate creative and analytical outputs, such as images, texts, and videos. • Use the Gemini API to design and deploy a functional chatbot.	• Signing up for Canva Activity. • Animaker's AI Video Generation tool. • Use Google Gemini to craft prompts and generate text outputs. • Explore ChatGPT for conversational text generation and creative tasks. • Write Python code to initialize the Gemini API and create a chat bot. (**For Advanced Learners)

UNIT 8: DATA STORYTELLING

SUB-UNIT	LEARNING OUTCOMES	ACTIVITY/PRACTICALS
• Introduction to Storytelling • Elements of a Story • Introduction to Data Storytelling • Why is Data Storytelling Powerful? • Essential Elements of Data Storytelling • Narrative Structure of a Data Story (Freytag's Pyramid) • Types of Data and Visualizations for Different Data • Steps to Create a Story Through Data • Ethics in Data Storytelling	• Understand the benefits of storytelling. • Appreciate the role of data storytelling in data analysis, data science, and AI. • Learn to combine data, visuals, and narrative to present complex information effectively. • Gain skills to draw meaningful insights from data stories.	• Create an effective data story using given data.

****Note- All portions under Advanced Learners are not to be evaluated in Theory or Practical Examinations.**

(NOTE: *marked units/portion is to be evaluated in practicals only)

PART – C:

1. Practical File:

The following are to be included in the Practical File

1. Minimum 6 programs of Python.
2. Minimum 3 programs using Orange Data Mining tool.
3. Minimum 1 problem to create a Data Story using all steps of Data Storytelling.

Optional Programs- for practical File

- Demonstration of train-test split in Linear Regression using Python.
- Chatbot using Google Gemini API.
- Orange Data Mining for Data Analytics.
- Classification problem using TensorFlow playground.
- Regression problem using TensorFlow playground.

(snapshots to be attached)

Sample programs for reference

I. Python

1. Write Python code to create a Pandas DataFrame using any sequence data type.
a) Display the DataFrame.
b) Display first 5 records.
c) Display last 10 records.
d) Display the number of missing values in the dataset.

2. Download dataset in the form of CSV from any public open-source website.
   a) Read CSV File and convert it into Pandas DataFrame.
   b) Perform statistical functions on the dataset to check the data, checking missing values, filling missing data etc.
3. Python Code to Evaluate a Model.

II. Orange Data Mining

1. Perform step wise procedure of Data Visualization using the Orange Data Mining Tool.
2. Perform Classification with Orange Data Mining.
3. Evaluate the Classification Model with Orange.
4. Perform Image analytics using the Orange data mining tool.
5.Write down steps to visualize word frequencies with Word Cloud using the Orange Data Mining tool.

Note: Snapshots of all the steps and outputs to be taken and pasted in the practical file.

III. Data Storytelling (Sample)

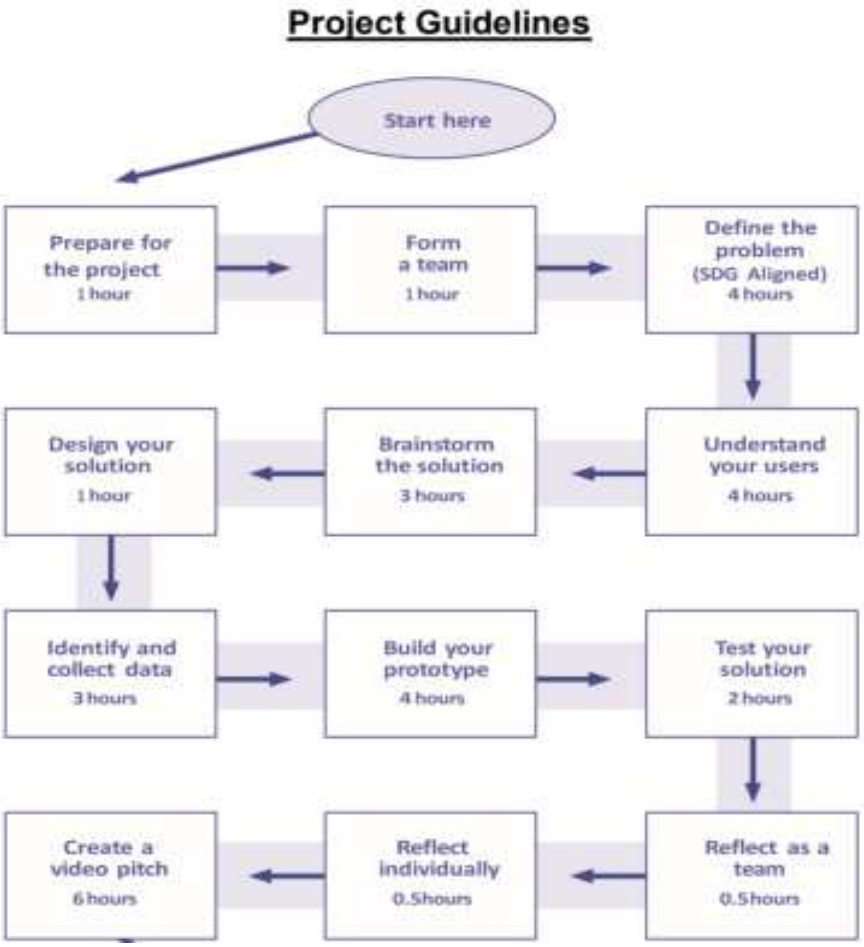
Using available data on student enrollment, attendance, and dropout rates, create a compelling data story that explores the impact of the Mid-Day Meal Scheme (MDMS) since its launch in 1995. Uncover trends, patterns, and correlations in the data to tell a story about how the implementation of the MDMS may have influenced dropout rates in the state over the years. Consider incorporating visualizations, charts, and graphs to effectively communicate your findings. Additionally, analyze any external factors or events that might have played a role in shaping these trends. Your goal is to provide a comprehensive narrative that highlights the relationship between the MDMS and student dropout rates in the state.

2. Capstone Project:

Capstone Project Guidelines:

- In a group, minimum 3 and maximum 5 students are allowed.
- Their projects should be aligned with any of the SDGs.
- Students will complete their Capstone Project in Class XII and complete the project documentation.
- Video of the Capstone Project should be exactly of 3 minutes duration.
- The video will have the following components:
    a. Problem statement
    b. To which SDG the project is aligned to
    c. AI concept/domains/algorithms used
    d. Working of the project
    e. Conclusion
    f. Acknowledgement to the teacher

Please refer to the Project guidelines of CBSE-IBM AI PROJECT COOKBOOK (Page -2)



Note for Educators: Python or No code/low code platforms like Orange Data Mining tool can be chosen by the students for developing their Capstone Projects.

LIST OF EQUIPMENTS/ MATERIALS:

The list given below is suggestive and an exhaustive list should be compiled by the teacher(s) teaching the subject. Only basic tools, equipment and accessories should be procured by the Institution so that the routine tasks can be performed by the students regularly for practice and acquiring adequate practical experience.

S. NO.	ITEM NAME, DESCRIPTION & SPECIFICATION
A	**HARDWARE**
1	Computer with latest configuration or minimum core I5 Processor or equivalent with minimum 8 GB RAM, 512 GB SSD, 17" LED Monitor, NIC Card, 3 button Mouse, Camera, 105 keys keyboard, speakers, mic, WiFi / Internet connectivity, Webcam, UPS, Dual Band Wireless Connectivity Min 100 Mbps and integrated graphic cards
2	Fire extinguisher
B	**SOFTWARE SPECIFICATIONS**
1	Any Operating System with antivirus activated
2	Python IDLE
3	Anaconda Navigator Distribution – Python IDE installed with software: NumPy, Pandas, Matplotlib, Scikit Learn)
4	Productivity Suite: Any (Google+ Suite recommended)
5	Orange Data Mining Tool

Additional Recommendations:

- Ensure regular updates and maintenance for all installed software to benefit from bug fixes, security patches, and new features.
- Provide licenses for commercial software, such as MS Office, as per the school's requirements and budget.
- Encourage teachers and students to stay updated with the latest versions of the software and tools and provide resources for learning and support.
- Consider implementing version control systems (e.g., Git) to facilitate collaborative coding and project management.

TEACHER'S/ TRAINER'S QUALIFICATIONS:

Qualification and other requirements for appointment of teachers/trainers for teaching this subject, on contractual basis should be decided by the State/ UT. The suggestive qualifications and minimum competencies for the teacher should be as follows:

Qualification	Minimum Competencies	Age Limit
Diploma in Computer Science/ Information Technology **OR** Bachelor Degree in Computer Application/ Science/ Information Technology (BCA, B.Sc. Computer Science/ Information Technology) **OR** Graduate with PGDCA OR DOEACCA Level Certificate. The suggested qualification is the minimum criteria. However higher qualifications will also be acceptable.	The candidate shouldhave a minimum of 1 year of work experiencein the same job role. • S/he should be able to communicate in English and local language. S/he should have knowledge of equipment, tools, material, Safety, Health & Hygiene.	• 18-37 years (as onJan. 01 (year)) • Age relaxation to be provided as perGovt. rules

Teachers/Trainers form the backbone of Skill (Vocational) Education being imparted as an integral part of Rashtriya Madhyamik Shiksha Abhiyan (RMSA). They are directly involved in teaching of Skill (vocational) subjects and also serve as a link between the industry and the schools for arranging industry visits, On-the-Job Training (OJT) and placement.

These guidelines have been prepared with an aim to help and guide the States in engaging quality Teachers/Trainers in the schools. Various parameters that need to be looked into while engaging the Vocational Teachers/Trainers are mode and procedure of selection of Teachers/ Trainers, Educational Qualifications, Industry Experience, and Certification/ Accreditation.

The State may engage Teachers/Trainers in schools approved under the component of scheme of Vocationalisation of Secondary and Higher Secondary Education under RMSA in following ways:

(i) Directly as per the prescribed qualifications and industry experience suggested by the PSS Central Institute of Vocational Education (PSSCIVE), NCERT or the respective Sector Skill Council (SSC).

OR

(ii) Through accredited Vocational Training Providers accredited under the National Quality Assurance Framework (NQAF*) approved by the National Skill Qualification Committee on 21.07.2016. If the State is engaging Vocational Teachers/Trainers through the Vocational Training Provider (VTP), it should ensure that VTP should have been accredited at NQAF Level2 or higher.

The National Quality Assurance Framework (NQAF) provides the benchmarks or quality criteriawhich the different organizations involved in education and training must meet in order to be accredited by competent bodies to provide government- funded education and training/skills activities. This is applicable to all organizations offering NSQF-compliant qualifications.

The educational qualifications required for being a Teacher/Trainer for a particular job role are clearly mentioned in the curriculum for the particular NSQF compliant job role. The State should ensure that teachers/ trainers deployed in the schools have relevant technical competencies for the NSQF qualification being delivered. Teachers/Trainers preferably should be certified by the concerned Sector Skill Council for the particular Qualification Pack/Job role which he will be teaching. Copies ofrelevant certificates and/or record of experience of the teacher/trainer in the industry should be kept as record.

To ensure the quality of the Teachers/Trainers, the State should ensure that a standardized procedurefor selection of (Vocational) Teachers/Trainers is followed. The selection procedure should consist ofthe following:

(i) Written test for the technical/domain specific knowledge related to the sector;
(ii) Interview for assessing the knowledge, interests and aptitude of trainer through a panel of experts from the field and state representatives; and
(iii) Practical test/mock test in classroom/workshop/laboratory.

In case of appointment through VTPs, the selection may be done based on the above procedure by a committee having representatives of both the State Government and the VTP. The State should ensure that the Teachers/ Trainers who are recruited should undergo induction training of 20 days for understanding the scheme, NSQF framework and Vocational Pedagogy beforebeing deployed in the schools. The State should ensure that the existing trainers undergo in-service training of 5 days every year tomake them aware of the relevant and new techniques/approaches in their sector and understand thelatest trends and policy reforms in vocational education. The Head Master/Principal of the school where the scheme is being implemented should facilitate and ensure that the (Vocational) Teachers/Trainers:

- Prepare session plans and deliver sessions which have a clear and relevant purpose and which engage the students;
- Deliver education and training activities to students, based on the curriculum to achieve the learning outcomes;
- Make effective use of learning aids and ICT tools during the classroom sessions;
- Engage students in learning activities, which include a mix of different methodologies, such as project-based work, team work, practical and simulation-based learning experiences;
- Work with the institution's management to organise skill demonstrations, site visits, on job trainings, and presentations for students in cooperation with industry, enterprises and other workplaces;
- Identify the weaknesses of students and assist them in up-gradation of competency;
- Cater to different learning styles and level of ability of students;
- Assess the learning needs and abilities, when working with students with different abilities
- Identify any additional support the student may need and help to make special arrangements for that support;
- Provide placement assistance

Assessment and evaluation of (Vocational) Teachers/Trainers is very critical for making them aware of their performance and for suggesting corrective actions. The States/UTs should ensure that the performance of the (Vocational) Teachers/Trainers is appraised annually. Performance based appraisal in relation to certain pre-established criteria and objectives should be done periodically to ensure the quality of the (Vocational) Teachers/Trainers.

Following parameters may be considered during the appraisal process:

- Participation in guidance and counseling activities conducted at Institutional, District and State level;
- Adoption of innovative teaching and training methods;
- Improvement in result of vocational students of Class X or Class XII;
- Continuous up-gradation of knowledge and skills related to the vocational pedagogy, communication skills and vocational subject;
- Membership of professional society at District, State, Regional, National and International level;
- Development of teaching-learning materials in the subject area;
- Efforts made in developing linkages with the Industry/Establishments;
- Efforts made towards involving the local community in Vocational Education
- Publication of papers in National and International Journals;
- Organization of activities for promotion of vocational subjects;
- Involvement in placement of students/student support services.

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** **(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) • फ़िराक गोरखपुरी – ग़ज़ल
	गद्य खंड	• विष्णु खरे – चार्ली चैप्लिन यानी हम सब (पूरा पाठ) • 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 I 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** 1. Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling) 2. Various Committees & their Responsibilities (pre; during & post) 3. Fixtures and their Procedures – Knock- Out (Bye & Seeding) & League (Staircase, Cyclic, Tabular method) and Combination tournaments 4. Intramural & Extramural tournaments – Meaning, Objectives & Its Significance 5. Community sports program (Sports Day, Health Run, Run for Fun, Run for Specific Cause & Run for Unity)	• To make the students understand the need and meaning of planning in sports, committees, and their responsibilities for conducting the sports event or tournament. • To teach them about the different types of tournaments and the detailed procedure of drawing fixtures for Knock Out, League Tournaments, and Combination tournaments. • To make the students understand the need for the meaning and significance of intramural and extramural tournaments • To teach them about the different types of community sports and their importance in our society.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** * Describe the functions of Sports Event management * Classify the committees and their responsibilities in the sports event * Differentiate the different types of tournaments. * Prepare fixtures of knockout, league & combination. * Distinguish between intramural and extramural sports events * Design and prepare different types of community

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

Unit 3	**Yoga as Preventive measure for Lifestyle Disease** 1. **Obesity:** Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottanasana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhanpranayama 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. • To teach about different Asanas in detail which can help as a preventive Measures for those Lifestyle Diseases.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning.	**After completing the unit, the students will be able to:** * Identify the asanas beneficial for different ailments and health problems. * Recognize importance of various asanas for preventive measures of obesity, diabetes, asthma, hypertension, back pain and arthritis * Describe the procedure for performing a variety of asanas for maximal benefits. * Distinguish the contraindications associated with performing different asanas. * Outline the role of yogic management for various health benefits and preventive measures.

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

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

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

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

	Age group 5-8 years/ class 1-3: BMI, Flamingo Balance Test, Plate Tapping Test Age group 9-18yrs/ class 4-12: BMI, 50mt Speed test, 600mt Run/Walk, Sit & Reach flexibility test, Strength Test (Partial Abdominal Curl Up, Push-Ups for boys, Modified Push-Ups for girls). 2. Measurement of Cardio-Vascular Fitness – Harvard Step Test – Duration of the Exercise in Seconds x100/5.5 X Pulse count of 1-1.5 Min after Exercise 3. Computing Basal Metabolic Rate (BMR) 4. Rikli & Jones - Senior Citizen Fitness Test o Chair Stand Test for lower body strength o Arm Curl Test for upper body strength	• To make students to determine physical fitness Index through Harvard Step Test/Rockport Test • To make students to calculate Basal Metabolic Rate (BMR) • To measure the fitness level of Senior Citizens through Rikli and Jones Senior Citizen Fitness Test.	learning, • Game-based learning and Expeditionary learning	years/ (class 1-3) and Age group 9-18yrs/ (class 4-12) * Determine physical fitness Index through Harvard Step Test/Rock- port Test * Compute Basal Metabolic Rate (BMR) * Describe the procedure of Rikli and Jones - Senior Citizen Fitness Test

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

	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. • Understanding the Sports Injuries (Classification, Causes, and Prevention) • Understanding the Aims & Objectives of First Aid • Understanding the Management of Injuries		• Classify sports injuries with its Management.
Unit 8	**Biomechanics and Sports** 1. Newton's Law of Motion & its application in sports 2. Types of Levers and their application in Sports. 3. Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports 4. Friction & Sports 5. Projectile in Sports	• Understanding Newton's Laws of Motion and their Application in Sports. • Make students understand the lever and its application in sports. • Make students understand the concept of Equilibrium and its application in sports. • Understanding Friction in Sports. • Understanding the concept of Projectile in sports.	• Lecture-based instruction, • Technology-based learning, • Group learning, • Individual learning, • Inquiry-based learning, • Kinesthetic learning, • Game-based learning and • Expeditionary learning	**After completing the unit, the students will be able to:** • Understand Newton's Law of Motion and its application in sports • Recognize the concept of Equilibrium and its application in sports. • Know about the Centre of Gravity and will be able to apply it in sports • Define Friction and application in sports. • Understand the concept of Projectile in sports.

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

	2. Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle. 3. Types & Methods to Develop – Strength, Endurance, and Speed. 4. Types & Methods to Develop – Flexibility and Coordinative Ability. 5. Circuit Training - Introduction & its importance	training and the different cycle in sports training. • Making the students Understand different types & methods of strengths, • endurance, and speed. • Making the students Understand different types & methods of flexibility and • coordinative ability. • Making the students understand Circuit training and its importance	• kinesthetic learning, • Game-based learning and • Expeditionary learning	for talent development in sports. • Understand sports training and the different cycle used in the training process. • Understand different types & methods to develop - strength, endurance, and speed in sports training • Understand different types & methods to develop – flexibility and coordinative ability. • 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** *The topics in this unit are:* 1. Introduction 2. Individual Differences in Human Functioning 3. Assessment of Psychological Attributes 4. Intelligence 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. 6. Individual Differences in Intelligence 7. Culture and Intelligence 8. Emotional Intelligence 9. Special Abilities: Aptitude: Nature and Measurement 10. Creativity
Unit II	**Self and Personality** *The topics in this unit are:* 1. Introduction 2. Self and Personality 3. Concept of Self 4. Cognitive and Behavioural aspects of Self 5. Culture and Self 6. Concept of Personality 7. Major Approaches to the Study of Personality

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

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

	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.