



TS DAV PUBLIC SCHOOL, BAHARAGORA

(Managed by DAV College Managing Committee, New Delhi)

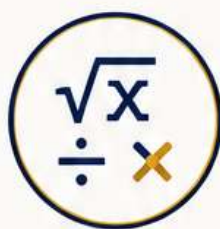
SPLIT-UP SYLLABUS

2026-27

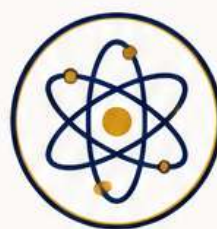
STD. XI



ENGLISH



MATHEMATICS



PHYSICS



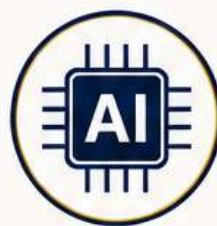
CHEMISTRY



BIOLOGY



COMPUTER
SCIENCE



ARTIFICIAL
INTELLIGENCE



PHYSICAL
EDUCATION

DISCIPLINE • DEDICATION • DETERMINATION

Split Up Syllabus → English Core XI

Sl. No.	Month	Working Days	Name of Chapter / Topic to be Covered
1	June	8	Introduction & Bridging Syllabus/Curriculum, Question Paper Pattern
2	July	25	Hornbill L-1 The Portrait of a Lady Hornbill P-1 A Photograph Snapshots L-1 The Summer of the Beautiful White Horse Classified Advertisements Note Making & Summarising Tenses Reading Comprehension ASL
3	August	23	Hornbill P-2 The Laburnum Top Snapshots L-2 The Address Posters Clauses Speech Reading Comprehension Practice
4	September	2	Hornbill L-3 Discovering Tut: The Saga Continues Hornbill P-3 The Voice of the Rain Snapshots L-3 Mother's Day Transformation of Sentences Debate
5	October	20	Hornbill L-4 The Adventure Hornbill P-4 Childhood Snapshots L-4 Birth Reading Comprehension Practice Writing Tasks Practice Listening & Speaking Activities Reordering of Sentences
6	November	23	Hornbill L-5 Silk Road Hornbill P-5 Father to Son Writing Tasks Practice Reading Comprehension Practice Grammar Practice
7	December	18	Snapshots L-5 The Tale of Melon City Reading Comprehension Practice Writing Tasks Practice Listening & Speaking Activities Grammar Practice ASL Project Submission
8	January	24	Reading Comprehension Practice Writing Tasks Practice Note Making Practice

			ASL Project & Viva Full Course Revision
9	February	23	Revision for SEE 2026
10	March	23	Session Ending Examination

Split-up Syllabus Class XI Session [2026-27]

Subject: Mathematics

Month	Chapter	Topics Covered	No. of Periods	Activities
APRIL	SETS	• Introduction • Types of Sets • Subsets • Power Set	04 Periods	To represent different theoretical operation using venn diagram.
MAY Before Vacation	SETS	• Universal Set • Venn Diagrams • Operations on Sets • Complement of a Set	10 Periods	
JUNE After Vacation	RELATIONS AND FUNCTIONS	• Introduction • Ordered Pairs • Cartesian Product • Relations • Types of Relations • Functions • Domain, Codomain and Range	08 Periods	To distinguish between a relation and a function using arrow diagram.
JULY	TRIGONOMETRIC FUNCTIONS	• Introduction • Angle Measurement • Degree and Radian Measure • Trigonometric Ratios • Trigonometric Functions • Trigonometric Identities • Graphs of Trigonometric Functions • General Solutions of Trigonometric Equations	12 Periods	To prepare the values of sine and cosine for angles with multiple of π and $\pi/2$. To draw the sign clock of trigonometric function.

	COMPLEX NUMBER AND QUADRATIC EQUATIONS • Introduction • Complex Numbers • Algebra of Complex Numbers • Modulus and Conjugate • Argand Plane • Quadratic Equations	07 Periods	
	LINEAR INEQUALITIES • Introduction • Inequalities • Algebraic Solutions of linear inequalities • Graphical Representations on Number Line	06 Periods	To verify and draw the graph of inequality $5x+4y-40<0$ and represent only one of the two half planes.
AUGUST	PERMUTATIONS AND COMBINATIONS • Introduction • Fundamental Principle of counting • Permutations • Combinations	08 Periods	
	BINOMIAL THEOREM • Introduction • General and Middle Term • Properties of Binomial Coefficients	06 Periods	To construct Pascal's triangle to obtain the coefficients of binomial expansion.
	SEQUENCE AND SERIES • Introduction • Sequence and Series • Arithmetic Progression (AP) • Geometric Progression (GP) • Sum to n terms • Arithmetic Mean and Geometric Mean	10 Periods	To demonstrate that the A.M. of different positive integers is always greater than the G.M.
SEPTEMBER		Revision + Half-Yearly Exam	

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OCTOBER	STRAIGHT LINES	• Introduction • Slope of a Line • Equation of Straight Line • Various Forms of Line Equation • Distance of a Point from a Line	08 Periods	
NOVEMBER	CONIC SECTIONS	• Introduction • Sections of a Cone • Circle • Parabola • Ellipse • Hyperbola	08 Periods	To construct a generating cone and then cut different type of conic sections.
DECEMBER	INTRODUCTION TO THREE DIMENSIONAL GEOMETRY LIMIT AND DERIVATIVES	• Introduction • Coordinate Axes in Space • Coordinates of a Point in Space • Distance Formula • Section Formula • Introduction • Algebra of Limits • Derivatives • Derivative of Polynomial and Trigonometric Functions	05 Periods 18 Periods	To obtain / explain the concept of octants by three mutually perpendicular planes in space.
JANUARY	STATISTICS PROBABILITY	• Introduction • Measures of Dispersion • Mean Deviation • Variance and Standard Deviation • Introduction • Random Experiments • Events • Probability of an Event • Addition Theorem of Probability Revision	06 Periods 06 Periods	To write the sample space , when a dice is rolled once, twice, thrice.... .

Prescribed Books:-

- 1) Mathematics Textbook for Class XI, NCERT Publications
- 2) Mathematics Exemplar Problem for Class XI, Published by NCERT
- 3) R.D. Sharma Textbook for Class XI
- 4) Mathematics Lab Manual class XI, published by NCERT



TARAPADA SARANGI
DAV Public School, Baharagora
Month Wise Split-up Syllabus

Class – XI

Subject – Physics (042)

Month	Chapter	Topics	No. of Periods
April	<u>Ch-1:</u> Units and Measurements	Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units.	6
May	<u>Cont. Ch-1:</u> Units and Measurements	Significant figures, Determining the uncertainty in result. Dimensions of physical quantities, dimensional analysis and its applications.	12
June	<u>Ch-2:</u> Motion in a straight line	Frame of reference, Motion in a straight line, Elementary concepts of differentiation and integration for describing motion, Uniform and non- uniform motion, average speed and average velocity and instantaneous velocity, uniformly accelerated motion,	9
July	<u>Cont. Ch-2:</u> Motion in a straight line	velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical and calculus treatment).	27
	<u>Ch-3:</u> Motion in a plane	Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration- projectile motion, uniform circular motion.	
	<u>Ch-4:</u> Laws of motion	Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion. Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).	

August	<u>Ch-5:</u> Work, Energy and Power	Work done by a constant force and a variable force; kinetic energy, work- energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: non-conservative forces, motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.	22
	<u>Ch-6:</u> System of particles and Rotational Motion	Centre of mass of a two-particle system, momentum conservation and Centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).	
September	<u>Cont. Ch-6:</u> System of particles and Rotational Motion	Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation). <i>Revision & Half Yearly Exam</i>	10
October	<u>Ch-7:</u> Gravitation	Kepler's laws of planetary motion, universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Gravitational potential energy and gravitational potential, escape speed, orbital velocity of a satellite, energy of an orbiting satellite.	8
November	<u>Ch-8:</u> Mechanical Properties of Solids	Elasticity, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity (qualitative idea only), Poisson's ratio; elastic energy. Application of elastic behavior of materials (qualitative idea only).	17
	<u>Ch-9:</u> Mechanical Properties of Fluids	Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its simple applications (Torricelli's law and Dynamic lift).	

December	<u>Cont. Ch-9:</u> Mechanical Properties of Fluids	Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.	23
	<u>Ch-10:</u> Thermal Properties of Matter	Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity. Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law.	
	<u>Ch-11:</u> Thermodynamics	Thermal equilibrium and definition of temperature, zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics, Second law of thermodynamics: Thermodynamic state variable and equation of state. Change of condition of gaseous state -isothermal, adiabatic, reversible, irreversible, and cyclic processes.	
January	<u>Ch-12:</u> Kinetic Theory	Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.	19
	<u>Ch-13:</u> Oscillations	Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their applications. Simple harmonic motion (S.H.M), uniform circular motion and its equations of motion; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period.	
	<u>Ch-14:</u> Waves	Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats.	
February	Revision & Annual Exam		Total - 153

MARKING SCHEME

Physics (theory) - 042

Sl. No.	UNIT	CHAPTERS	MARKS
I.	Physical World and Measurement	Ch.–1: Unit and Measurement	23
II.	Kinematics	Ch.–2: Motion in a Straight Line	
		Ch.–3: Motion in a plane	
III.	Laws of Motion	Ch.–4: Laws of Motion	
IV.	Work, Energy and Power	Ch.–5: Work, Energy and Power	17
V.	Motion of System of particles and Rigid Body	Ch.–6: System of particles and Rotational Motion	
VI.	Gravitation	Ch.–7: Gravitation	
VII.	Properties of Bulk Matter	Ch.–8: Mechanical Properties of Solids	
		Ch.–9: Mechanical Properties of Fluids	
		Ch.–10: Thermal Properties of Matter	
VIII.	Thermodynamics	Ch.–11: Thermodynamics	20
IX	Behaviors of perfect Gasses and Kinetic Theory of Gasses	Ch.–12: Kinetic Theory	
X.	Oscillations and Waves	Ch.–13: Oscillations	10
		Ch.–14: Waves	
Total			70

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

EVALUATION SCHEME

Max. Marks: 30.

Time: 3 hours

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

SECTION–A

Experiments

1. To measure diameter of a small spherical/cylindrical body and to measure internal Diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence Find its volume.
2. To measure diameter of a given wire and thickness of a given sheet using screw Gauge.
3. To determine volume of an irregular lamina using screw gauge.
4. To determine radius of curvature of a given spherical surface by a spherometer.
5. To determine the mass of two different objects using a beam balance.
6. To find the weight of a given body using parallelogram law of vectors.
7. Using a simple pendulum, plot its graph and use it to find the effective length of Second's pendulum.
7. To study variation of time period of a simple pendulum of a given length by taking bobs of same size but different masses and interpret the result.
8. To study the relationship between force of limiting friction and normal reaction and to Find the coefficient of friction between a block and a horizontal surface.
9. To find the downward force, along an inclined plane, acting on a roller due to Gravitational pull of the earth and study its relationship with the angle of inclination θ by Plotting graph between force and $\sin\theta$.

Activities

1. To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.
2. To determine mass of a given body using a metre scale by principle of moments.
3. To plot a graph for a given set of data, with proper choice of scales and error bars.
4. To measure the force of limiting friction for rolling of a roller on a horizontal plane.
5. To study the variation in range of a projectile with angle of projection.
6. To study the conservation of energy of a ball rolling down on an inclined plane (using a double inclined plane).
7. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time.

SECTION-B

Experiments

1. To determine Young's modulus of elasticity of the material of a given wire.
2. To find the force constant of a helical spring by plotting a graph between load and Extension.
3. To study the variation in volume with pressure for a sample of air at constant Temperature by plotting graphs between P and V, and between P and $1/V$.
4. To determine the surface tension of water by capillary rise method.
5. To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.
6. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.
7. To determine specific heat capacity of a given solid by method of mixtures.
8. To study the relation between frequency and length of a given wire under constant tension using sonometer.
9. To study the relation between the length of a given wire and tension for constant frequency using sonometer.
10. To find the speed of sound in air at room temperature using a resonance tube by two resonance positions.

Activities

1. To observe change of state and plot a cooling curve for molten wax.
2. To observe and explain the effect of heating on a bi-metallic strip.
3. To note the change in level of liquid in a container on heating and interpret the observations.
4. To study the effect of detergent on surface tension of water by observing capillary rise.
5. To study the factors affecting the rate of loss of heat of a liquid.
6. To study the effect of load on depression of a suitably clamped metre scale loaded at
 - (i) its end
 - (ii) in the middle.
7. To observe the decrease in pressure with increase in velocity of a fluid.

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T.S.D.A.V. PUBLIC SCHOOLS

Split-Up SYLLABUS - XI

Academic Year: 2026 -2027

Subject: CHEMISTRY

Name of the Text Book: NCERT

Month	Chapters to be taught	Portions for test/Activities to be done
School begins 2nd April Total working days -22	Some basic concept of chemistry-- importance and scope of chemistry nature of matter, laws of chemical combination ,Dalton atomic theory.	Quantitative Estimation (i) Using a chemical balance. (ii) Preparation of standard solution of Oxalic acid.
May Total working days -13	Atomic and stoichiometry molar masses mole concept and molar mass percentage composition empirical and molecular formula chemical reaction Tokyo Maitri and calculation based on stoichiometry	
JUNE. Total working Days - 9	Structure of atom--discovery electron proton and Newton ,isotope and isobars ,Thomson model and its limitation, Rutherford model of atom, Thomson model and its limitation, Bohr's model and its limitation . concept of shells and sub shells, dual nature of matter and light ,de broglie relationship.	Determination of strength of a given solution of sodium hydroxide by titrating it against standard solution of oxalic acid.
18th May-18th June (Summer Vacation)		
July Total working days -26	Uncertainty principle , Aufbau principles, Pauli's exclusion principle ,and Hund's rule ,electronic configuration of atoms stability of half filled orbital and completely filled orbitals . Classification of elements -- brief history of the development of periodic table ,modern periodic law and the present form of periodic table , periodic trends in properties of element atomic radii, ionic radii, inert gas radii , ionization enthalpy , electron gain enthalpy ,electronegativity , nomenclature of element with atomic number greater than 100. Chemical Bonding and molecular structure --- ionic Bond ,covalent bond , Lewis's structure polar character of covalent bond ,covalent character of ionic Bond ,valence bond theory, resonance, geometry of covalent molecule.	
August Total working days - 23		determination of strength of a given solution of hydrochloric acid by titrating it against standard sodium carbonate solution.
September Total working days -24	VSEPR theory, concept of hybridization , involving s,p and d orbitals and shapes of some simple molecules, MOT theory, hydrogen bond. Chemical Thermodynamics--- concept of system and type of systems surrounding, work, heat energy ,extensive and intensive properties , first law of Thermodynamics, internal energy and enthalpy ,heat capacity and specific heat measurement	qualitative analysis--- determination of one cation and one anion in a given salt.

T.S.D.A.V. PUBLIC SCHOOLS

Split-Up SYLLABUS - XI

Academic Year: 2026 -2027

Subject: CHEMISTRY

Name of the Text Book: NCERT

October Total working days --21	Hess's law of constant heat summation, enthalpy of bond dissociation ,combustion, atomization sublimation ,ionization , Second law of thermodynamics, entropy, Gibb's energy change for spontaneous and non spontaneous processes, Third law of thermodynamics. Equilibrium --- equilibrium in physical and chemical processes dynamic nature of equilibrium law mass action factor affecting equilibrium ,	detection of nitrogen sulphur chlorine in organic compounds.
November total working days-17		
December Total working days -19	Le chatelier's principle, ionic equilibrium - ionization of acid and bases, degree of ionization , ionization of poly basic acid strength concept of PH, hydrolysis of salt , buffer solution ,henderson equation ,solubility product, common ion effect. Redox reaction --concept of oxidation and reduction redox reaction balancing redox reaction, application of redox reaction.	
January Total working days -23	Organic chemistry-- classification and IUPAC Nomenclature organic compound, electronic displacement in a covalent bond inductive effect electromeric effect resonance and type of conjugation, carbo cations carbo anion electrophiles and nucleophiles type of organic reactions, hydrocarbons--alken alkenes and alkyne , automatic hydrocarbon-- IUPAC Nomenclature benzeen resonance, mechanism of electrophilic substitution halogenation ,Fridel Craft alkylation and acylation. directive influence of the functional group in mono substituted benzene toxicity.	
Februaty Total working days--23	Revision.	

Split- up Syllabus for Biology

Class- XI

Session – 2026-27

MONTH	CHAPTERS	TOPICS TO BE COVERED	NO. OF PERIODS	MARKS
April	<u>Ch-1</u> The Living World	- Biodiversity - Need for classification - Taxonomical hierarchy - Binomial nomenclature	6 Periods	2 marks
May	<u>Ch-2</u> Biological Classification	- Five kingdom classification - Salient features and classification of Monera, Protista and Fungi - Lichens, Viruses and Viroids.	10 Periods	3 marks
June	<u>Ch-3</u> Plant Kingdom	- Classification of plants into major groups - Salient and distinguishing features of Algae, Bryophyta, Pteridophyta, Gymnosperms and Angiosperms.	8 Periods	5 marks
July	<u>Ch-4</u> Animal Kingdom	- Salient features and classification of animals - Non-chordates up to phyla level - Chordates upto class level.	12 Periods	5 marks
	<u>Ch-5</u> Morphology of Flowering Plants	- Morphology of different parts of flowering plants(root, stem, leaf, - Inflorescence - Flower, fruit and seed.	12 Periods	3 marks

		• Description of family Solanaceae		
August	Ch-6 Anatomy of Flowering Plants	• Anatomy and functions of tissue systems in dicots and monocots.	6 Periods	3 marks
	Ch-8 Cell : The Unit of Life	• Cell theory • Structure of prokaryotic and eukaryotic cells • Plant cell and animal cell; • cell envelope, cell membrane, cell wall, • Cell organelles – structure and function.	7 Periods	5 marks
	Ch-9 Biomolecules	• Chemical constituents of living cells • Biomolecules, structure and function of proteins, carbohydrates, lipids, and nucleic acids • Enzyme – types, properties, enzyme action.	11 Periods	5 marks
September	Ch-7 Structural Organization in Animal	• Morphology, Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog.	6 Periods	4 marks
	Revision + Half Yearly			

October	Ch- 10 Cell Cycle and Cell Division	• Cell cycle • Mitosis, meiosis and their significance	8 Periods	5 marks
	Ch-14 Breathing and Exchange of gases	• Respiratory organs in animals • Respiratory system in humans • Mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration. • Respiratory volume • Disorders related to respiration	10 Periods	2 marks
November	Ch-11 Photosynthesis in Higher Plants	• Photosynthesis as a means of autotrophic nutrition • pigments involved in photosynthesis • cyclic and non-cyclic photophosphorylation; photorespiration; • C3 and C4 pathways • factors affecting photosynthesis.	9 Periods	4 marks
	Ch-12 Respiration in Plants	• Cellular respiration – glycolysis, fermentation (anaerobic) • TCA cycle and electron transport system (aerobic) • Amphibolic pathways • Respiratory quotient.	9 Periods	5 marks

	Ch-15 Body Fluids and Circulation	• Composition of blood, blood groups, coagulation of blood • Composition of lymph and its function • Human circulatory system – Structure of human heart, cardiac cycle, ECG • Double circulation • Disorders of circulatory system	6 Periods	2 marks
December	Ch-13 Plant Growth and Development	• Seed germination • Phases of plant growth and plant growth rate, conditions of growth • Differentiation, dedifferentiation and redifferentiation • Sequence of developmental processes	7 Periods	3 marks
	Ch-16 Excretory Products and Their Elimination	• Modes of excretion - ammonotelism, ureotelism, uricotelism • Human excretory system – structure and function • Urine formation • Regulation of kidney function • Role of other organs in excretion • Disorders	10 Periods	5 marks

	<u>Ch-17</u> Locomotion and Movement	• Types of movement - ciliary, flagellar • Skeletal muscle, contractile proteins and muscle contraction • Skeletal system and its functions • Joints and it's types • Disorders of muscular and skeletal systems	7 Periods	2 marks
January	<u>Ch-18</u> Neural Control and Coordination	• Nervous system in humans – central nervous system; peripheral nervous system and visceral nervous system • Generation and conduction of nerve impulse.	9 Periods	5 marks
	<u>Ch-19</u> Chemical Coordination and Integration	• Endocrine glands and hormones • Human endocrine system – hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads • Mechanism of hormone action • Role of hormones as messengers and regulators • Hypo – and hyperactivity and related disorders	9 Periods	2 marks

February	Revision + Annual Exam
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PRACTICALS

Time Allowed – 3 hours

Max. Marks – 30 marks

EVALUATION SCHEME		MARKS
One Major Experiment Part A (Experiment No- 1,3,7,8)		5 marks
One Minor Experiment Part A (Experiment No- 6,9,10,11,12,13)		4 marks
Slide Preparation Part A (Experiment No- 2,4,5)		5 marks
Spotting Part B		7 marks
Practical Record + Viva Voce	Credit to the student's work over the academic session may be given	4 marks
Project Record + Viva Voce		5 marks
TOTAL		30 Marks

A. List of Experiments :-

1. Study and describe locally available common flowering plants, from family Solanaceae (Poaceae, Asteraceae or Brassicaceae can be substituted in case of particular geographical location) including dissection and display of floral whorls, anther and ovary to show number of chambers (floral formulae and floral diagrams), type of root (tap and adventitious); type of stem (herbaceous and woody); leaf (arrangement, shape, venation, simple and compound).
2. Preparation and study of T.S. of dicot and monocot roots and stems (primary).
3. Study of osmosis by potato osmometer.
4. Study of plasmolysis in epidermal peels (e.g. Rhoeo/lily leaves or flashy scale leaves of onion bulb).
5. Study of distribution of stomata on the upper and lower surfaces of leaves.
6. Comparative study of the rates of transpiration in the upper and lower surfaces of 7 leaves.
7. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.
8. Separation of plant pigments through paper chromatography.
9. Study of the rate of respiration in flower buds/leaf tissue and germinating seeds.
10. Test for presence of urea in urine.
11. Test for presence of sugar in urine.
12. Test for presence of albumin in urine.

13. Test for presence of bile salts in urine.

B. Study and Observe the following (spotting):-

1. Parts of a compound microscope.
2. Specimens/slides/models and identification with reasons – Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.
3. Virtual specimens/slides/models and identifying features of – Amoeba, Hydra, liver fluke, Ascaris, leech, earthworm, prawn, silkworm, honey bee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.
4. Mitosis in onion root tip cells and animal's cells (grasshopper) from permanent slides.
5. Types of inflorescence (cymose and racemose).
6. Human skeleton and different types of joints with the help of virtual images/models only.

TS DAV PUBLIC SCHOOL, BAHARAGORA

SPLITUP SYLLABUS FOR THE ACADEMIC YEAR 2026-27

CLASS: XI

SUBJECT: COMPUTER SCIENCE (083)

Theory ::

Unit No.	Unit Name	Marks
1	Computer Systems and Organisation	10
2	Computational Thinking and Programming -1	45
3	Society, Law, and Ethics	15
	Total	70

Practical ::

S.No.	Unit Name	Marks (Total=30)
1.	Lab Test (12 marks)	
	Python program (60% logic + 20% documentation + 20% code quality)	12
2.	Report File + Viva (10 marks)	
	Report file: Minimum 20 Python programs	7
	Viva voce	3
3.	Project (that uses most of the concepts that have been learnt)	8

SPLIT-UP SYLLABUS

Month	No. of Days	Weightage	Main topic and sub-topics to be covered	Activities/Projects/ Practical
APRIL / JUNE 2026	21	10	Unit I: Computer Systems and Organisation: • Basic computer organisation: Introduction to Computer System, hardware, software, input device, output device, CPU, memory (primary, cache and secondary), units of memory (bit, byte, KB, MB, GB, TB, PB) • Types of software: System software (Operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler, and interpreter), application software • Operating System(OS): functions of the operating system, OS user interface • Boolean logic: NOT, AND, OR, NAND, NOR, XOR, NOT, truth tables and De Morgan's laws, Logic circuits • Number System: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems • Encoding Schemes: ASCII, ISCII, and Unicode (UTF8, UTF32)	Note: Exploring inside computer system in the computer lab Record of the configuration of computer system used by the student in the computer lab

Month	No. of Days	Weightage	Main topic and sub-topics to be covered	Activities/Projects/ Practical
APRIL/ JUNE / JULY 2026		10	Unit II: Computational Thinking and Programming - I • Introduction to Problem-solving: Steps for Problem solving (Analysing the problem, developing an algorithm, coding, testing, and debugging), representation of algorithms using flowchart and pseudocode, decomposition • Familiarization with the basics of Python programming: Introduction to Python, Features of Python, executing a simple —hello world" program, execution modes: interactive mode and script mode, Python character set, Python tokens(keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r-value, use of comments • Knowledge of data types: Number(integer, floating point, complex), boolean, sequence(string, list, tuple), None, Mapping (dictionary), mutable and immutable data types.	Programming in Python : Print 'Hello World' Program. Programs involving simple data types Program to find absolute value, Program to Sort 3 nos.
AUGUST 2026	21	45	Unit II: Computational Thinking and Programming – 1 • Operators: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators (is, is not), membership operators (in, not in) • Expressions, statement, type conversion & input/output: precedence of operators, expression, evaluation of expression, python statement, type conversion (explicit &	Python programs to apply different operators and types. Python programs using if, if.. else, if ... elif... else.

		implicit conversion), accepting data as input from the console and displaying output • Errors: syntax errors, logical errors, runtime errors • Flow of control: introduction, use of indentation, sequential flow, conditional and iterative flow control • Conditional statements: if, if-else, if-elif-else, Flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number.	
SEPTEMBER 2026	12	Iterative Statement: for loop, range (), while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, Summation of series, finding the factorial of a positive number, etc.	Creating Python Programs using loop.
OCTOBER 2026/ NOVEMBER-2026	20	Strings: introduction, string operations (concatenation, repetition, membership and slicing), traversing a string using loops, built-in functions/methods–len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(),rstrip(), strip(), replace(), join(), partition(), split() Unit II: Computational Thinking and Programming – 1 • Lists: introduction, indexing, list operations (concatenation, repetition, membership and slicing), traversing a list using loops, built-in functions/methods–len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists,	Creating python Programs Using String. Different python Programs to Implement List, and related methods.

OCTOBER 2026/ NOVEMBER-2026			• Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership and slicing); built-in functions/methods – len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple; suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple. • Dictionary: introduction, accessing items in a dictionary using keys, mutability of a dictionary (adding a new term, modifying an existing item), traversing a dictionary, built-in functions/methods – len(), dict(), keys(), values(), items(), get(), update(), del(), del, clear(), fromkeys(), copy(), pop(),popitem(), setdefault(), max(), min(), sorted(); Suggested programs: count the number of times a character appears in a given string using a dictionary, create a dictionary with names of employees, their salary and access them.	Different python Programs to implement Tuples related Methods. Different Python Programs to Implement dictionary and related methods.
DECEMBER 2026	15	15	Introduction to Python modules: • Importing module using ‘import <module>’ and using from statement, importing math module (sqrt(), ceil(), floor(), pow(), fabs(), sin(), cos(), tan()); random module (random(), randint(), randrange()), statistics module (mean(), median(), mode()). Unit III: Society, Law and Ethics: • Digital Footprints • Digital Society and Netizen: net etiquettes, communication etiquettes, social media etiquettes • Data Protection: Intellectual property rights (copyright, patent , trademark), violation of IPR(plagiarism, copyright infringement, trademark infringement), open source software and licensing (Creative Commons, GPL and Apache)	Generate random number using random module and implement different random functions. Also create Python Programs using all functions.

JANUARY 2027	24	14 T 0P	Unit III: Society, Law and Ethics: • Cyber Crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, cyber trolls, cyber bullying • Cyber safety: safely browsing the web, identity protection, confidentiality • Malware: viruses, trojans, adware • E-waste management: proper disposal of used electronic gadgets. • Information Technology Act (IT Act) • Technology and society: Gender and disability issues while teaching and using computers.	
FEBRUARY 2027			REVISION	
MARCH 2027			REVISION TERM- II EXAMINATION	

NOTE: T-THEORY PERIODS AND P- PRACTICAL PERIODS

TERM-I syllabus should be completed by 10.09.2026

100% syllabus of TERM-II should be completed by 28.02.2027

Duration: 3 hours

Total Marks: 30

Suggested Practical List

Programming in Python: At least the following Python concepts should be covered in the lab Sessions: expressions, conditionals, loops, list, dictionary, and strings. The following are some representative lab assignments.

- Input a welcome message and display it.
- Input two numbers and display the larger / smaller number.
- Input three numbers and display the largest / smallest number.
- Given two integers x and n, compute x^n .
- Write a program to input the value of x and n and print the sum of the following series:
 $1+x+x^2+x^3+x^4+\dots\dots\dots x^n$
 $1-x+x^2-x^3+x^4-\dots\dots\dots x$
 $x + x^2/2 - x^3/3 + x^4/4 - \dots\dots\dots x^n/n$
 $x + x^2/2! - x^3/3! + x^4/4! - \dots\dots\dots x^n/n!$
- Determine whether a number is a perfect number, an Armstrong number or a palindrome.
 - Input a number and check if the number is a prime or composite number.
 - Display the terms of a Fibonacci series.
 - Compute the greatest common divisor and least common multiple of two integers.
 - Count and display the number of vowels, consonants, uppercase, lowercase characters in string.
 - Input a string and determine whether it is a palindrome or not; convert the case of characters in a string.
 - Find the largest/smallest number in a list/tuple
 - Input a list of numbers and swap elements at the even location with the elements at the odd location.
 - Input a list of elements, sort in ascending/descending order using Bubble/Insertion sort.
 - Input a list/tuple of elements, search for a given element in the list/tuple.
 - Input a list of numbers and test if a number is equal to the sum of the cubes of its digits. Find the smallest and largest such number from the given list of numbers.
 - Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have marks above 75.

Suggested Reading Material

A. NCERT Textbook for COMPUTER SCIENCE (Class XI)

B. Support Materials on the CBSE website.

CBSE | DEPARTMENT OF SKILL EDUCATION

CURRICULUM FOR SESSION 2026-2027

ARTIFICIAL INTELLIGENCE (SUB. CODE - 843)

JOB ROLE: AI Assistant

CLASS – XI

OBJECTIVES OF THE COURSE

AI is a discipline in computer science that focuses on developing intelligent machines, machines that can learn and then teach themselves. These machines, then, can process vast amounts of data than humans can, and several times faster. However, AI can go across all disciplines to change the world for the better– from creating new healthcare solutions, to designing hospitals of the future, improving farming and our food supply, helping refugees acclimatize to the new environments, improving educational resources and access, and even cleaning our oceans, air, and water supply. The potential for humans to improve the world through AI is endless, as long as we know how to use it.

LEARNING OUTCOMES

In this course, the students will develop knowledge, skills and values to understand AI and its implications for our society and the world and to use AI to solve authentic problems, now and in the future. The students will engage with a host of multi-media online resources, as well as hands-on activities and sequence of learning experiences.

The following are the main objectives of the course:

1. Develop informed citizens with an understanding of AI and the skills to think critically and knowledgeably about the implications of AI for society and the world.
2. Develop engaged citizens with a rigorous understanding of how AI can be harnessed to improve life and the world we live in.
3. Stimulate interest and prepare students for further study to take up careers as AI scientists and developers to solve complex real-world problems.

SCHEME OF UNITS

This course is a planned sequence of instructions consisting of units meant for developing employability and vocational competencies of students opting for skill subject along with other education subjects. The unit-wise distribution of hours and marks for class XI is as follows:

CBSE | DEPARTMENT OF SKILL EDUCATION

ARTIFICIAL INTELLIGENCE (SUBJECT CODE - 843)

CLASS - XI (SESSION 2026-2027)

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

	UNITS	NO. OF HOURS		MAX MARKS
PART A	Employability skills			
	Unit 1: Communication Skills – III	15		2
	Unit 2: Self-Management Skills – III	10		2
	Unit 3: ICT Skills – III	15		2
	Unit 4: Entrepreneurial Skills – III	10		2
	Unit 5: Green Skills – III	10		2
	TOTAL	60		10
PART B	Subject specific skills	Theory	Practical	
	Unit 1: Introduction: Artificial Intelligence for Everyone	4	10	4
	Unit 2: Unlocking your Future in AI	6	10	5
	Unit 3: Python Programming	10	20	5
	Unit 4: Introduction to Capstone Project	6	15	5
	Unit 5: Data Literacy – Data Collection to Data Analysis	6	15	6
	Unit 6: Machine Learning Algorithms	9	15	6
	Unit 7: Leveraging Linguistics and Computer Science	5	10	5
	Unit 8: AI Ethics and Values	4	5	4
	TOTAL	50	100	40
PART C	PRACTICAL WORK / PROJECT WORK			
	IBM Skills Build Certification/any other industry certification			5
	Capstone Project			12
	Bootcamps/ Internship/other startups			7
	Practical File			10
	Lab Test/ Written Exam (based on practical file)			10
	Viva Voce (based on practical file and project)			6
	TOTAL			50
	GRAND TOTAL			100

DETAILED CURRICULUM/TOPICS:

Part-A: EMPLOYABILITY SKILLS

S. No.	Units	Duration in Hours
1.	Unit 1: Communication Skills – III	15
2.	Unit 2: Self-Management Skills – III	10
3.	Unit 3: Basic Information and Communication Technology Skills – III	15
4.	Unit 4: Entrepreneurial Skills – III	10
5.	Unit 5: Green Skills – III	10
	TOTAL	60

NOTE: 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: Artificial Intelligence for Everyone
- ❖ Unit 2 – Unlocking your Future in AI
- ❖ Unit 3 – Python Programming
- ❖ Unit 4 – Introduction to Capstone Project
- ❖ Unit 5 – Data Literacy – Data Collection to Data Analysis
- ❖ Unit 6 – Machine Learning Algorithms
- ❖ Unit 7 – Leveraging Linguistics and Computer Science
- ❖ Unit 8 – AI Ethics and Values

UNIT 1 - INTRODUCTION: ARTIFICIAL INTELLIGENCE FOR EVERYONE

S. No	LEARNING OUTCOMES	THEORY	PRACTICAL
1	Students will be able to – • Communicate effectively about AI concepts and applications in written and oral formats. • Describe the historical development of AI. • Differentiate between various types and domains of AI, including their applications. • Recognize the key terminologies and concepts related to machine learning and deep learning. • Formulate informed opinions on the potential benefits and limitations of AI in various contexts.	• What is Artificial Intelligence? • Evolution of AI • Types of AI • Domains of AI • AI Terminologies • Benefits and limitations of AI	• Categorize the given applications into the three domains. Examples of Machine Learning & Reinforcement Learning given in the course below: <u>IBM Skills Build – Introduction to AI</u>

UNIT 2 - UNLOCKING YOUR FUTURE IN AI

S. No	LEARNING OUTCOMES	THEORY	PRACTICAL
1	Students will be able to – • Articulate the demand for AI professionals and the diverse career opportunities available in the field. • Identify the requisite skills and tools needed to pursue a career in artificial intelligence. • Understand the potential roles and responsibilities of AI professionals across different industries. • Explore resources for further learning and skill development in the field of AI. • Evaluate their own interests and skills to determine potential pathways for a career in AI.	• The Global Demand • Some Common Job Roles In AI • Essential Skills and Tools for Prospective AI Careers • Opportunities in AI across Various Industries	• Identify ten companies currently hiring employees for in specific AI positions. • Note down the technical skills and soft skills listed by any two companies for the specific AI position. <u>IBM Skills Build: Your Future in AI: The Job Landscape</u>

UNIT 3 - PYTHON PROGRAMMING

S. No	LEARNING OUTCOMES	THEORY	PRACTICAL
1	Students will be able to – • Explain the basics of python programming language and write programs with basic concepts of tokens. • Use selective and iterative statements effectively. • Gains practical knowledge on how to use the libraries efficiently.	Level 1: Basics of python programming, character sets, tokens, modes, operators, datatypes, Control Statements Level 2: CSV Files, Libraries – NumPy, Pandas, Scikit-learn	• Minimum five programs to be taught using operators, data types, control statements (Level 1) • Minimum 5 programs on NumPy, Pandas, Scikit-learn (Level 2) <u>IBM SkillsBuild - Python for Data Science</u>

UNIT 4 - INTRODUCTION TO CAPSTONE PROJECT

S. No	LEARNING OUTCOMES	THEORY	PRACTICAL
1	Students will be able to – • Decompose any problem using the 5W1H method. • Apply Design thinking methodology. • Create empathy maps. • Align problems to SDGs. • Apply all the learnings in solving real world problems. • Express their solution to a problem in non-technical words.	• Design Thinking • Empathy Map • Sustainable Development Goals • Capstone Project	• Create an empathy map for a given scenario. • Project Abstract Creation Using Design Thinking Framework. <u>IBM SkillsBuild - What is Design thinking?</u>

UNIT 5 - DATA LITERACY – DATA COLLECTION TO DATA ANALYSIS

S. No	LEARNING OUTCOMES	THEORY	PRACTICAL
1	Students will be able to – • Explain the importance of data literacy in AI. • Identify different data collection methods and their applications. • Comprehend mathematical concepts related to matrices, its operations, and applications. • Apply basic data analysis techniques to analyse data. • Visualize the data using different techniques.	• What is Data Literacy? • Data Collection • Exploring Data • Statistical Analysis of data • Representation of data, Python Programs for Statistical Analysis and Data Visualization • Introduction to Matrices • Data Pre-processing • Data in Modelling and Evaluation	• Identification of the level of measurement. • Python programs to demonstrate the use of mean, median, mode, standard deviation and variance. • Python programs to visualise the line graph, bar graph, histogram, scatter graph and pie chart using matplotlib. rainfall.csv IBM SkillsBuild - Data Visualisation with Python (Modules 1,2,3)

UNIT 6 – MACHINE LEARNING ALGORITHMS

S. No	LEARNING OUTCOMES	THEORY	PRACTICAL
1	Students will be able to – • Differentiate the different types of machine learning methods. • They will be able to understand the concept behind each machine learning methods. • Apply these methods to develop simple solutions for some day-to-day situations. • Build up this knowledge to the next level to apply during Capstone Project development.	• Machine Learning in a nutshell • Types of Machine Learning • Supervised Learning • Understanding Correlation, Regression, Finding the line, Linear Regression algorithm • Classification – How it works, Types, k – Nearest Neighbour algorithm • Unsupervised Learning • Clustering – How it works, Types, k -means Clustering algorithm	• Calculation of Pearson correlation coefficient in MS – Excel. • Demonstration of Linear regression in MS – Excel. • Demonstration of Linear regression using python program. (**For Advanced Learners) • Demonstration of k – Nearest Neighbour using python program. (**For Advanced Learners) • Demonstration of k – means clustering using python program. (**For Advanced Learners) IBM SkillsBuild - Machine learning with Python

UNIT 7 – LEVERAGING LINGUISTICS AND COMPUTER SCIENCE

S. No	LEARNING OUTCOMES	THEORY	PRACTICAL
1	Students will be able to – • Develop a better understanding of the complexities of language and the challenges involved in NLP tasks. • Learn new techniques and algorithms for NLP tasks.	• Understanding Human Language Complexity • Introduction to Natural Language Processing (NLP) - Emotion Detection and Sentiment Analysis, Classification Problems, Chatbot • Phases of NLP • Applications of NLP	• Write an article on “IBM Project Debater – Interesting facts”. • Create a chatbot on ordering ice-creams using any of the following platforms: • Google Dialogflow • Botsify.com • Botpress.com • Program to print the POS tags of a statement. (**For Advanced Learners) • Creating a simple rule based chatbot using Python. (**For Advanced Learners) IBM SkillsBuild - Natural Language Processing

UNIT 8 – AI ETHICS AND VALUES

S. No	LEARNING OUTCOMES	THEORY	PRACTICAL
1	Students will be able to – • Demonstrate an understanding of the fundamental principles of ethics and gain insight into ethical considerations related to AI technologies. • Develop an understanding of AI bias, its sources, and its real-world implications, as well as the ethical considerations. • Identify and apply strategies for mitigating bias in AI systems to promote fairness and transparency in technology. • Recognize the significance of AI policies in promoting responsible, safe, and ethical use of AI technologies.	• Ethics in Artificial Intelligence • The five pillars of AI Ethics • Bias, Bias Awareness, Sources of Bias • Mitigating Bias in AI Systems • Developing AI Policies • Moral Machine Game • Survival of the Best Fit Game	• Summarize your insights and interpretations from the video "Humans need not apply." • Activity: Role Play on biased AI systems • Comparative study of AI policies (that involve examining guidelines and principles) established by various organizations and regulatory bodies. • Understanding ethical dilemma using: Moral machine Survival of the best fit IBM SkillsBuild - AI Ethics

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

PART – C

1. Practical File

Note: The following to be included in the Practical File

- **One certification (IBM SkillsBuild (any of the courses listed above) /any other industry certification)**
- **At least one activity from each unit**
- **One participation certificate of bootcamp/internship**

Unit-wise sample activities for Practical file given as below:

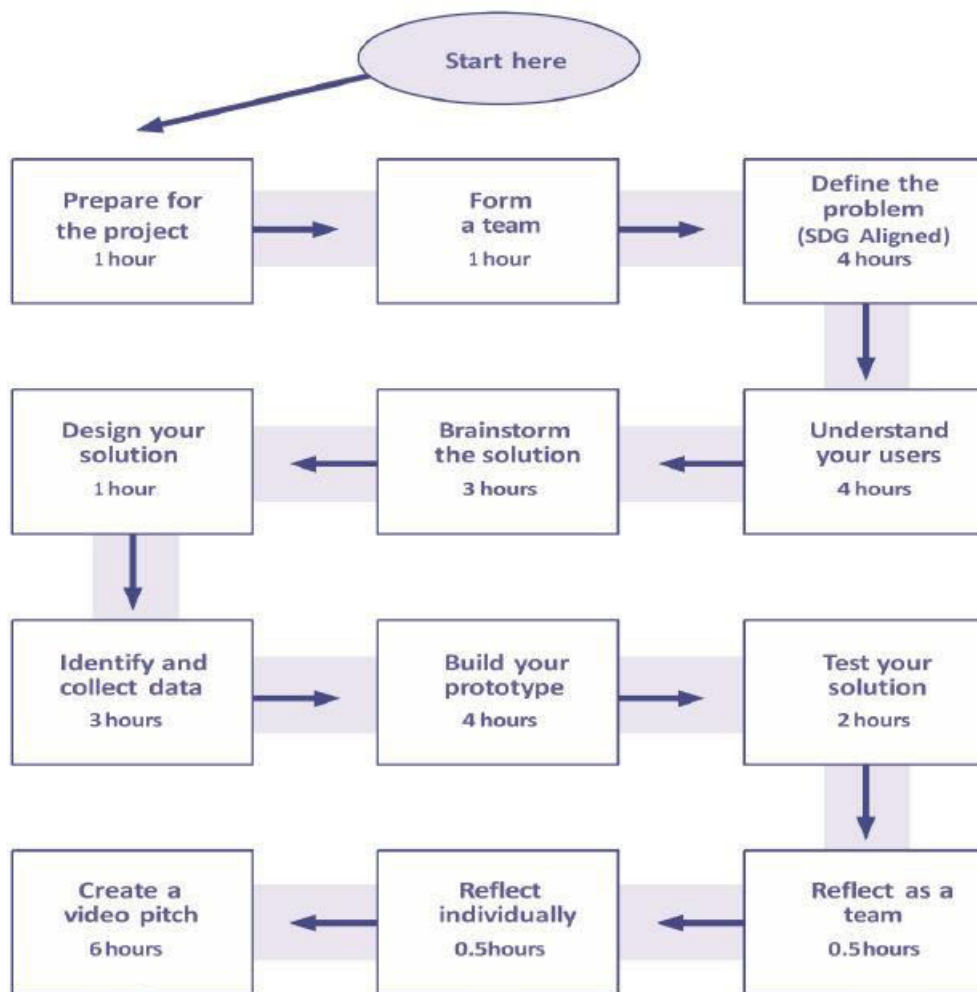
1. Categorize the given applications into the three domains as given on pg. 5 of the Students Handbook.
2. Identify ten companies currently hiring employees for in specific AI positions.
3. Note down the technical skills and soft skills listed by any two companies for the specific AI position.
4. Python programs using operators, data types, control statements (**Level 1**)
5. Python programs on NumPy, Pandas, Scikit-learn (**Level 2**)
6. Create an empathy map for a given scenario.
7. Project Abstract Creation Using Design Thinking Framework.
8. Python programs to demonstrate the use of mean, median, mode, standard deviation and variance.
9. Python programs to visualise the line graph, bar graph, histogram, scatter graph and pie chart using matplotlib.
10. Calculation of Pearson's correlation coefficient in MS – Excel.
11. Demonstration of Linear regression in MS – Excel.
12. Create a chatbot on ordering ice-creams using any of the following platforms:
 - a. Google Dialogflow
 - b. Botsify.com
 - c. Botpress.com
 - d. Any other online platform
13. Summarize your insights and interpretations from the video "Humans need not apply."
14. Comparative study of AI policies (that involve examining guidelines and principles) established by various organizations and regulatory bodies.
15. Understanding ethical dilemma using
 - Moral machine
 - Survival of the best fit

Additional programs for Practice (not to be evaluated)

[Sample programs for regression, classification and clustering along with the dataset is in this link.](#)

2. Capstone Project

Project Guidelines



Note: Prepare for the project; Form a team; Define the problem (SDG aligned); Understand your users; Brainstorm the solution; Design your solution; stages must be completed in the project documentation.
Project Documentation(As per the process given in “Project Guidelines”, on page 2 of [CBSE IBM Projects Cookbook](#))

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, Wi-Fi / 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)

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 should have a minimum of 1 year of work experience in 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 on Jan. 01 (year)) Age relaxation to be provided as per Govt. 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 Level 2 or higher.

The National Quality Assurance Framework (NQAF) provides the benchmarks or quality criteria which 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 of relevant 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 procedure for selection of (Vocational) Teachers/Trainers is followed. The selection procedure should consist of the 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 before being deployed in the schools. The State should ensure that the existing trainers undergo in-service training of 5 days every year to make them aware of the relevant and new techniques/approaches in their sector and understand the latest 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.

Split-up Syllabus Class XI Session [2026-27]

Subject: Physical Education

Month	Week	Chapter	Topics Covered
APRIL	Week 1	Ch:-1 Changing Trends and Careers in Phy.Edu.	Concept, Aims & Objectives of Phy.Edu. Development of phy.Edu. in India-Post Independence
	Week 2		Changing Trends- wearable gears, sports equipment & technological advancement.
	Week 3		Careers options in Phy.Edu. Khelo-India Program & Fit-India Program MCQ discussion & Copy checking
	Week 4	Ch:-2 Olympism Value Education	Olympism Concept & Olympics Values (Excellence, Friendship & Respect)
MAY Before Summer Vacation	Week 1	Ch:-2 continued....	Olympic Value Education Ancient & Modern Olympics
	Week 2		Olympic Symbols, Flag, Motto, Oath and Anthem Summer Vacation Assignment (Ch-1,2 Question-Answer)
JUNE After Summer Vacation	Week 3 (after 18 th June)		Assignment Copy Checking Meaning and Importance of Yoga
	Week 4	Ch:-3 Yoga	Introduction of Astanga Yoga Yogic Kriyas
JULY	Week 1	Ch:-3 Continued..	Pranayama and its types Active Lifestyle and Stress management
	Week 2		Concept of Disability and Disorder Types of Disability, its causes & nature
	Week 3	Ch:-4 Physical Education and Sports for Children with Special Needs	Disability Etiquette Aim and Objectives of Adaptive Phy.Edu
	Week 4		Role of various professionals for CWSN [Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist and Special Educator] Copy Checking
	Week 1		Meaning & Importance of Wellness, Health and Physical Fitness

AUGUST	Week 2	Ch:-5 Physical Fitness, Wellness and Lifestyle	Dimensions of Wellness, Health and Physical Fitness
	Week 3		Traditional Sports & Regional Games Leadership through Physical Activity and Sports
	Week 4		Introduction to First Aid-PRICE
SEPTEMBER	Week 1	Revision	Ch- 1-5 Q/A Revision Q/A Doubt Session
	Week 2,3 & 4		Half-Yearly Exam Half-Yearly Copy Checking
OCTOBER	Week 1	Ch:-6 Test, Measurement & Evaluation	Defination and Importance of Test, Measurement & Evaluation
	Week 2		Calculation of BMI, Waist-Hip Ratio & Skinfold Measurement
	Week 3(Durga Puja Vacation)		Revision
	Week 4		Somatotypes [Endomorphy, Mesomorphy & Ectomorphy] Measurement of Health Related Fitness Components
NOVEMBER	Week 1	Ch:-7 Fundamentals of Anatomy, Physiology in Sports	Defination and Importance of Anatomy and Physiology in Exercise and Sports
	Week 2(Deepawali Vacation)		Revision
	Week 3		Functions of Skeletal System Classification of Bones Types of Joints
	Week 4		Properties and Functions of Muscles Structure and Functions of Circulatory System and Heart
DECEMBER	Week 1	Ch:-7 Continued... Ch:-8 Fundamentals of Kinesiology And Biomechanics in Sports	Structure and Functions of Respiratory System MCQ Discussion(Ch-6 & 7) Copy Checking
	Week 2		Defination and Importance of Kinesiology and Biomechanics Principals of Biomechanics
	Week 3		Kinetics and Kinematics in Sports Body Movements
	Week 4		Axis and Planes- Concept and its application in body movements
	Week 1(Winter Vacation)		Revision

JANUARY	Week 2	Ch:-9 Psychology and Sports	Defination and Importance of Psychology Developmental Characteristics at Different Stages of Development
	Week 3		Adolescent Problems & their Management Team Cohesion and Sports Psychological Attributes: [Attention, Resilience, Mental Toughness]
	Week 4		Concept and Principles of Sports Training Training Load: Over Load, Adaptation and Recovery
FEBRUARY		Ch:-10 Training & Doping in Sports	
	Week 1	Ch:-10 Continued...	Warming-up & Limbering Down Concept of Skill, Technique, Tactis & Strategies
	Week 2		Concept of Doping and its disadvantages Copy Checking
	Week 3(Revision)		Final Revision Q/A Doubt Session
	Week 4(Revision)		Final Revision Q/A Doubt Session