ENGLISH CORE (CODE NO. 301)
CLASS – XI (2019-2020)

SECTION – A( 20 Marks)

READING COMPREHENSION 45 Periods

There shall be two unseen passages (including poems) with a variety of questions like Very Short Answer Questions, Short Answer Questions and Multiple Choice Questions, including 04 marks for vocabulary such as word formation and inferring meaning. Multiple Choice Questions(1x6=6marks), Very Short Answer Questions(1x6=6marks), 01 Short Answer Questions(1x3=3marks), 01 Long Answer Question (1x5=5marks).

The total range of the 2 passages including a poem or a stanza, should be around 900-1000 words as per the following details:
1. The passage of 550-600 words in length will be used for note-making and summarising.
2. The passage of 350-400 words in length will be used to test comprehension, interpretation and inference.
3. An unseen poem of about 28-35 lines.

The passages as given above could be of any one of the following types: Factual passages, e.g., illustrations, description, reports / Discursive passages involving opinion, e.g., argumentative, persuasive/Literary passages e.g. extracts from fiction, biography, autobiography, travelogue, etc. In the case of a poem, the text may be shorter than the prescribed word limit.

SECTION B( 30 Marks) WRITING SKILLS AND GRAMMAR

Writing 60 Periods

Short Answer Questions: Based on notice/ poster/ advertisement - 4 Marks

Long Answer Questions: Letters based on verbal/visual input. – 6 Marks. It would cover all types of letters. Letter types may include: (a) business or official letters (for making enquires, registering complaints, asking for and giving information, placing orders and sending replies) (b) letters to the editor (giving suggestions/opinions on an issue) (c) application for a job with a bio-data or résumé (d) letter to the school or college authorities, regarding admissions, school issues, requirements / suitability of courses, etc.

Very Long Answer Question: Composition in the form of article/speech/report writing or a narrative- 10 Marks

GRAMMAR Different grammatical structures in meaningful contexts will be tested.

Item types will include gap filling, sentence reordering, dialogue completion and sentence transformation.
The grammar syllabus will include determiners, tenses, clauses, modals and Change of Voice.

These grammar areas will be tested through 10 Very short answer type questions on the following:

A. Error Correction, editing tasks
B. Re-ordering of sentences,
C. Transformation of sentences

SECTION C (30 Marks) LITERATURE 70 Periods

Questions from the following texts to test comprehension at different levels, like literal, inferential and evaluative:

1. Hornbill: Textbook published by NCERT, New Delhi
2. Snapshots: Supplementary Reader published by NCERT, New Delhi.

The following have been re-included:

Textbooks Name of the lessons Hornbill 1. Landscape of the Soul 2. The Adventure 3. Silk Road 4. The Laburnum Top (Poetry)
Snapshots 5. The Ghat of the only World

3 Very Short Answer Questions out of four (2 questions should be from Hornbill) - Based on an extract from poetry to test reference to context comprehension and appreciation. – (1x3=3 Marks)

3 Short Answer Questions out of four (2 questions should be from Hornbill) - Based on prose, poetry and plays from both the texts. (3x3=9 Marks)

One Long Answer Question out of two from Hornbill (to be answered in 120-150 words) Based on prescribed texts to test global comprehension and extrapolation beyond the texts. 6 Marks

One Long Answer Questions out of two from Snapshots (to be answered in 120-150 words) - Based on theme, plot, incidents or events to test global comprehension and extrapolation beyond the texts. 6 Marks

One Long Answer Question out of two from Hornbill (to be answered in 120-150 words) - Based on understanding appreciation, analysis and interpretation of the characters/events/episodes/incidents. 6 Marks

Assessment of Listening and Speaking Skills 45 Periods

Assessment of Listening and Speaking Skills will be for 20 marks. It is recommended that listening and speaking skills should be regularly practiced in the class.
SYLLABUS BREAK-UP FOR THE SESSION 2019-2020
CLASS- XI

Students are expected to have acquired a reasonable degree of language proficiency in English by the time they come to class XI, and the course will aim, essentially, at promoting the higher-order language skills.

**The general objectives at this stage are:**

i) to listen and comprehend as well as record in writing oral presentations on a variety of topics.

ii) to develop greater confidence and proficiency in the use of language skills necessary for social and academic purpose.

iii) to participate in group discussions, interviews by making short oral presentation on various topics.

iv) to perceive the overall meaning and organisation of the text (i.e., the relationships of the different "chunks" in the text to each other).

v) to identify the central/main point and supporting details, etc., to build communicative competence in various registers of English.

vi) to promote advanced language skills with an aim to develop the skills of reasoning, drawing inferences, etc. through meaningful activities.

vii) to translate texts from mother tongue(s) into English and vice versa.

viii) to develop ability and knowledge required in order to engage in independent reflection and enquiry.

**OBJECTIVES OF ASSESSMENT FOR LISTENING SKILL**

To enable learners to:

- understand a range of genres and contexts of spoken English including academic, personal and social aspect.
- understand detailed information for a purpose.
- understand and interpret a range of features of the given context.
- understand the topic and the main points and also to distinguish the main points from the details.

**OBJECTIVES OF ASSESSMENT FOR SPEAKING SKILL**

To enable the learners to:

- express and respond to personal feelings and opinions.
- present oral reports or summaries; narrate incidents or events.
- present, adopt different strategies to convey ideas according to purpose, topic and audience, and to frame questions so as to elicit desired response.
- to take part in group discussions, summaries ideas, elicit views of others, express and argue a point of view clearly.
- participate in spontaneous spoken course.

**TEXT BOOKS:**
REFERENCE BOOKS:
BBC by BRAJINDRA BOOK COMPANY
OXFORD SAMPLE PAPERS

MONTH – WISE SYLLABUS BREAK UP

APRIL (16)
GRAMMAR- TENSES
HORNBILL: THE PORTRAIT OF A LADY, A PHOTOGRAPH
WRITING SKILL - FACTUAL DESCRIPTION, NOTICE

MAY (19)
HORNBILL- THE LABURNUM TOP
GRAMMAR- MODALS, DETERMINERS
WRITING SKILL- LETTER TO THE EDITOR, ARTICLE

JULY (23)
HORNBILL- DISCOVERING TUT, LANDSCAPE OF THE SOUL
SNAPSHOTS - THE SUMMER OF THE BEAUTIFUL WHITE HORSE
WRITING SKILL - NOTE MAKING, ARTICLE, JOB APPLICATION

AUGUST (23)
HORNBILL - CHILDHOOD, WE’RE NOT AFRAID TO DIE
SNAPSHOTS - ALBERT EINSTEIN AT SCHOOL, RANGA’S MARRIAGE
WRITING SKILL- SPEECH, BUSINESS LETTER-MAKING ENQUIRY, COMPLAINT,
PLACING & CANCELLING ORDER

ASSESSMENT OF SPEAKING & LISTENING SKILLS

SEPTEMBER
(10)
HORNBILL - AILING PLANET
SNAPSHOTS- THE ADDRESS

OCTOBER (17)
HORNBILL - THE BROWNING VERSION, VOICE OF THE RAIN
SNAPSHOTS- THE MOTHER’S DAY

NOVEMBER (24)
HORNBILL - FATHER TO SON, THE ADVENTURE
SNAPSHOTS- BIRTH
GRAMMAR- CLAUSES
ASSESSMENT OF SPEAKING & LISTENING SKILLS
DECEMBER (23)
SNAPSHOTS-THE TALE OF THE MELON CITY,SILK ROAD
WRITING SKILL-POSTER
JANUARY
(15)
SNAPSHOTS- THE GHAT OF THE ONLY WORLD
WRITING SKILL- DEBATE
EXAMWISE SYLLABUS BREAK UP
MONDAY TEST 1: MAY 6, 2019 (SYLLABUS)
READING: COMPREHENSION
GRAMMAR-TENSES
WRITING SKILL-NOTICE, FACTUAL DESCRIPTION
LITERATURE-THE PORTRAIT OF A LADY, A PHOTOGRAPH
MONDAY TEST 2: AUGUST 19, 2019 (SYLLABUS)
READING: COMPREHENSION
GRAMMAR-MODALS, DETERMINERS
WRITING SKILL-LETTER TO EDITOR
LITERATURE- DISCOVERING TUT, THE LABURNUM TOP, SUMMERN OF THE
BEAUTIFUL WHITE HORSE
MID TERM- COMPLETE SYLLABUS COVERED TILL THE COMMENCEMENT
OF MID TERM
MONDAY TEST 3: NOVEMBER 4, 2019 (SYLLABUS)
READING – NOTE MAKING
LITERATURE -MOTHER’S DAY, FATHER TO SON,AILING PLANET
WRITING SKILL-BUSINESS LETTERS
INTEGRATED GRAMMAR PRACTICE
ANNUAL TERM
COMPLETE SYLLABUS
SYLLABUS: CLASS – XI
MATHEMATICS (2019-20)

Objectives
The broad objectives of teaching Mathematics at senior school stage intend to help the students:

- To acquire knowledge and critical understanding, particularly by way of motivation and visualization, of basic concepts, terms, principles, symbols and mastery of underlying processes and skills.

- To feel the flow of reasons while proving a result or solving a problem.

- To apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method.

- To develop positive attitude to think, analyze and articulate logically.

- To develop interest in the subject by participating in related competitions.

- To acquaint students with different aspects of Mathematics used in daily life.

- To develop an interest in students to study Mathematics as a discipline.

- To develop awareness of the need for national integration, protection of environment, observance of small family norms, removal of social barriers, elimination of gender biases.

- To develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics

Prescribed Books:
- Mathematics - Textbook for Class XI, NCERT Publication
- Mathematics Exemplar Problems - Textbook for Class XI, NCERT Publication
- Mathematics Lab manual for Class XI, NCERT

Reference Book:
MONTH –WISE SYLLABUS BREAK – UP

APRIL

**Sequence and Series:**

MAY

**Trigonometric Functions:**
Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. General solution of trigonometric equations. Proof and simple applications of sine and cosine formulae.

JULY

**Sets:**

**Relations & Functions:**
Ordered pairs, Cartesian product of sets. Number of elements in the cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto R x R x R). Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special kind of relation from one set to another. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions. Concept of exponential and logarithmic function.

**Principle of Mathematical Induction:**
Process of the proof by induction, motivating the application of the method by looking at natural numbers as the least inductive subset of real numbers. The principle of mathematical induction and simple applications.

AUGUST
**Complex Numbers and Quadratic Equations:**

Need for complex numbers, especially, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane and polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equations in the complex number system. Square root of a complex number.

**Linear Inequalities:**

Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line. Graphical solution of linear inequalities in two variables. Graphical solution of system of linear inequalities in two variable

**SEPTEMBER**

**Permutations and Combinations:**

Fundamental principle of counting. Factorial Permutations and combinations, derivation of formulae and their connections, simple applications

**OCTOBER**

**Binomial Theorem:**

History, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, General and middle term in binomial expansion, simple applications.

**Straight Lines:**

Brief recall of two dimensional geometry from earlier classes. Shifting of origin. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point-slope form, slope-intercept form, two-point form, intercept form and normal form. General equation of a line. Equation of family of lines passing through the point of intersection of two lines. Distance of a point from a line.

**NOVEMBER**

**Conic Sections:**

Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.

**Introduction to Three-dimensional Geometry**

Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula

**Statistics:**
Measures of dispersion; mean deviation, variance and standard deviation of ungrouped/grouped data. Analysis of frequency distributions with equal means but different variances.

**DECEMBER**

**Limits and Derivatives:**

Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to scope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions

**Probability:**

Random experiments; outcomes, sample spaces (set representation). Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with the theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events

**JANUARY AND FEBRUARY**

Revision of the whole syllabus and the revision of model test papers

**TEST –WISE SYLLABUS BREAK - UP**

**MONDAY TEST – 1**

Chapter 9 from N.C.E.R.T textbook

**MID – TERM EXAM**

Chapters 1-6 and Chapter 9 from N.C.E.R.T textbook

**MONDAY TEST – 2**

Chapters 7-8 from N.C.E.R.T textbook

**MONDAY TEST – 3**

Chapters 10-12 from N.C.E.R.T textbook

**ANNUAL EXAM**

Whole Syllabus
OBJECTIVES:

Senior Secondary stage of school education is a stage of transition from general education to discipline-based focus on curriculum. The present updated syllabus keeps in view the rigour and depth of disciplinary approach as well as the comprehension level of learners. Due care has also been taken that the syllabus is comparable to the international standards. Salient features of the syllabus include:

- Emphasis on basic conceptual understanding of the content.
- Emphasis on use of SI units, symbols, nomenclature of physical quantities and formulations as per international standards.
- Providing logical sequencing of units of the subject matter and proper placement of concepts with their linkage for better learning.
- Reducing the curriculum load by eliminating overlapping of concepts/content within the discipline and other disciplines.
- Promotion of process-skills, problem-solving abilities and applications of Physics concepts.

Besides, the syllabus also attempts to

- strengthen the concepts developed at the secondary stage to provide firm foundation for further learning in the subject.
- expose the learners to different processes used in Physics-related industrial and technological applications.
- develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.
- promote problem solving abilities and creative thinking in learners.
- develop conceptual competence in the learners and make them realize and appreciate the interface of Physics with other disciplines.

Recommended Textbooks.

1. Physics Part-I, Textbook for Class XI, Published by NCERT
2. Physics Part-II, Textbook for Class XI, Published by NCERT

Reference books:

1. New simplified Physics. by S.L. Arora, Publisher- Dhanpat Rai & Co.
2. Fundamental Physics. by K.L. Gogia and Gomber, Publisher- Pradeep Publications

JULY

Unit I: Physical World and Measurement

Chapter 1: Physical World

Physics - scope and excitement; nature of physical laws; Physics, technology and society.

Chapter 2: Units And Measurement
Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; significant figures.

Dimensions of physical quantities, dimensional analysis and its applications.

*Unit II: Kinematics*

**Chapter 3: Motion In A Straight Line**

Frame of reference, Motion in a straight line: Position-time graph, speed and velocity.


---

**Practicals**

<table>
<thead>
<tr>
<th>Expt. 1</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expt. 2</td>
<td>To measure diameter of a given wire and thickness of a given sheet using screw gauge.</td>
</tr>
<tr>
<td>Expt. 3</td>
<td>To determine volume of an irregular lamina using screw gauge.</td>
</tr>
<tr>
<td>Expt. 4</td>
<td>To determine radius of curvature of a given spherical surface by a spherometer.</td>
</tr>
<tr>
<td>Act. 1</td>
<td>To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.</td>
</tr>
<tr>
<td>Act. 2</td>
<td>To determine mass of a given body using a metre scale by principle of moments.</td>
</tr>
</tbody>
</table>

**Revision:** Monthly Test I  Unit I, II

---

**AUGUST**

**Chapter 4: 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. Relative velocity. 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.

*Unit III: Laws of Motion*

**Chapter 5: Laws Of Motion**

Practicals

<table>
<thead>
<tr>
<th>Expt. 5</th>
<th>To find the weight of a given body using <strong>parallelogram law</strong> of vectors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expt. 6</td>
<td>Using a <strong>simple pendulum</strong>, plot L-T and L-T² graphs. Hence find the effective length of second's pendulum using appropriate graph.</td>
</tr>
<tr>
<td>Act 3</td>
<td>To study the conservation of energy of a ball rolling down on an inclined plane (using a double inclined plane).</td>
</tr>
<tr>
<td>Act 4</td>
<td>To observe and explain the effect of heating on a bi-metallic strip.</td>
</tr>
</tbody>
</table>

**SEPTEMBER**

*Unit IV: Work, Energy and Power*

**Chapter 6 : 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: conservation of mechanical energy (kinetic and potential energies); non-conservative forces: motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.

**Unit V: Motion of System of Particles and Rigid Body**

**Chapter 7 : Systems 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, laws 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.

Practicals

| Expt. 7 | 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. |
Chapter 7: Systems Of Particles And Rotational Motion (contd..)

Moment of inertia, radius of gyration. Values of moments of inertia, for simple geometrical objects
(no derivation). Statement of parallel and perpendicular axes theorems and their applications.

Unit VI: Gravitation

Chapter 8: Gravitation


Practicals

<table>
<thead>
<tr>
<th>Expt. 8</th>
<th>To find the <strong>downward force</strong>, along an inclined plane, acting on a roller due to Gravitational pull of the earth and study its relationship with the angle of inclination by plotting graph between force and sin.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expt. 9</td>
<td>To find the force constant of a <strong>helical spring</strong> by plotting a graph between load and extension</td>
</tr>
<tr>
<td>Act 5</td>
<td>To note the change in level of liquid in a container on heating and interpret the observations.</td>
</tr>
<tr>
<td>Act 6</td>
<td>To study the effect of load on depression of a suitably clamped metre scale loaded at (i) its end (ii) in the middle.</td>
</tr>
</tbody>
</table>

Revision: Monthly Test II Unit IV, V

November

Unit VII: Properties of Bulk Matter

Chapter 9: Mechanical Properties Of Solids

Elastic behaviour, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity, Poisson's ratio; elastic energy.

Chapter 10: 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 applications.

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.

**Chapter 11: Thermal Properties Of Matter**

Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; $C_p, C_v$ - 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, Green house effect.

**Revision:** Monthly Test III Unit VI, VII

**Practicals**

<table>
<thead>
<tr>
<th>Expt.</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>To determine the surface tension of water by <strong>capillary rise</strong> method.</td>
</tr>
<tr>
<td>1</td>
<td>To determine the <strong>coefficient of viscosity</strong> of a given viscous liquid by measuring terminal velocity of a given spherical body.</td>
</tr>
<tr>
<td>2</td>
<td>To study the relationship between the temperature of a hot body and time by plotting a <strong>cooling curve</strong>.</td>
</tr>
<tr>
<td>3</td>
<td>To study the relation between the length of a given wire and tension for constant frequency using <strong>sonometer</strong>.</td>
</tr>
<tr>
<td>4</td>
<td>To find the speed of sound in air at room temperature using a <strong>resonance tube</strong> by two resonance positions</td>
</tr>
</tbody>
</table>

**DECEMBER**

**Unit VIII: Thermodynamics**

**Chapter 12: Thermodynamics**

Thermal equilibrium and definition of temperature (zeroth law of thermodynamics). Heat, work and internal energy. First law of thermodynamics. Isothermal and adiabatic processes.


**Unit X: Oscillations and Waves**

**Chapter 14: Oscillations**

Periodic motion - time period, frequency, displacement as a function of time. Periodic functions.

Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a spring-restoring force and
force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of
expression for its time period. Free, forced and damped oscillations (qualitative ideas only), resonance.

Practicals

| Expt.1 5  | To determine Young's modulus of elasticity of the material of a given wire. |
| Demo-Exp 1&2 | Projectile motion: Range of trajectory at different angles of projection. Applications of Bernoulli’s principle. |

JANUARY

Unit X: Oscillations and Waves

Chapter 15: Waves

Wave motion. Transverse and longitudinal waves, speed of wave motion. 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, Doppler effect.

FEBRUARY

Revision: Annual examination (full syllabus)

EXAMWISE SYLLABUS BREAKUP

MONTHLY TEST I Unit I, II

Unit I: Physical World and Measurement
- Chapter 1: Physical World
- Chapter 2: Units And Measurement

Unit II: Kinematics
- Chapter 3: Motion In A Straight Line
- Chapter 4: Motion In A Plane

MONTHLY TEST II Unit IV, V

Unit IV: Work, Energy and Power
- Chapter 6: Work, Energy And Power

Unit V: Motion of System of Particles and Rigid Body
- Chapter 7: Systems of Particles And Rotational Motion
MONTHLY TEST III  Unit VI, VII

Unit VI: Gravitation
Chapter 8 : Gravitation

Unit VII: Properties of Bulk Matter
Chapter 9 : Mechanical Properties Of Solids
Chapter 10 : Mechanical Properties Of Fluids
Chapter 11 : Thermal Properties Of Matter

MID-TERM EXAM.
(Unit I, II, III)

Unit I: Physical World and Measurement
Chapter 1 : Physical World
Chapter 2 : Units And Measurement

Unit II: Kinematics
Chapter 3 : Motion In A Straight Line
Chapter 4 : Motion In A Plane

Unit III: Laws of Motion
Chapter 5 : Laws Of Motion

PRACTICAL EXAMINATION (I) – 3 hr duration

MONTHLY TEST IV

Unit X: Oscillations and Waves
Chapter 14 : Oscillations
Chapter 15 : Waves

FINAL TERM EXAM. (Complete Syllabus)
(Unit I to Unit X, excluding unit IX)

Unit I: Physical World and Measurement
Chapter 1 : Physical World
Chapter 2 : Units and Measurement

Unit II: Kinematics
Chapter 3 : Motion in a Straight Line
Chapter 4 : Motion in a Plane

Unit III: Laws of Motion
Chapter 5 : Laws of Motion

Unit IV: Work, Energy and Power
Chapter 6 : Work, Energy And Power

Unit V: Motion of System of Particles and Rigid Body
Chapter 7 : Systems Of Particles And Rotational Motion

Unit VI: Gravitation
Chapter 8 : Gravitation

Unit VII: Properties of Bulk Matter
- Chapter 9 : Mechanical Properties of Solids
- Chapter 10 : Mechanical Properties of Fluids
- Chapter 11 : Thermal Properties of Matter

Unit VIII: Thermodynamics
- Chapter 12 : Thermodynamics

Unit X: Oscillations and Waves
- Chapter 14 : Oscillations
- Chapter 15 : Waves

PRACTICAL EXAMINATION (II) – 3 hr duration
OBJECTIVES:

The broad objectives of teaching Chemistry at Senior Secondary Stage are:

- to promote understanding of basic facts and concepts in chemistry while retaining the excitement of chemistry.
- to make students capable of studying chemistry in academic and professional courses (such as medicine, engineering, technology) at tertiary level.
- to expose the students to various emerging new areas of chemistry and apprise them with their relevance in future studies and their application in various spheres of chemical sciences and technology.
- to equip students to face various challenges related to health, nutrition, environment, population, weather, industries and agriculture.
- to develop problem solving skills in students.
- to expose the students to different processes used in industries and their technological applications.
- to apprise students with interface of chemistry with other disciplines of science such as physics, biology, geology, engineering etc.
- to acquaint students with different aspects of chemistry used in daily life.
- to develop an interest in students to study chemistry as a discipline.

TEXT BOOKS

- Chemistry Part -I, Class-XI, Published by NCERT.
- Chemistry Part -II, Class-XI, Published by NCERT.
- MODERN’S abc of chemistry (Lab Manual)

REFERENCE BOOKS

- MODERN’S abc of chemistry (Part-I and Part-II) By – Dr. S.P.Jauhar (Modern Publishers)
- Pradeep’s Chemistry (Part-I and Part-2) by S.C. Kheterpal and S.N. Dhawan

MONTH WISE SYLLABUS BREAK-UP

APRIL & MAY

Unit I: Some Basic Concepts of Chemistry
General Introduction: Importance and scope of chemistry.
Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules.
Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.

Unit II: Structure of Atom
Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle,
concept of orbitals
Quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals –

Aufbau principle, Pauli’s exclusion principle and Hund’s rule, electronic configuration of atoms, stability of half filled and completely filled orbitals.

Unit XIV: Environmental Chemistry
Environmental pollution - air, water and soil pollution, chemical reactions in atmosphere, smog, major atmospheric pollutants, acid rain, ozone and its reactions, effects of depletion of ozone layer, greenhouse effect and global warming- pollution due to industrial wastes, green chemistry as an alternative tool for reducing pollution, strategies for control of environmental pollution.

PRACTICALS:
1. Determination of melting point of an organic compound
2. Determination of boiling point of an organic compound
3. Crystallization of impure sample of the following: Alum, copper sulphate.
4. Determination of pH of some solutions obtained from fruit juices, varied concentrations of acids, bases and salts using pH paper or universal indicator.
5. Comparing the pH of solutions of strong and weak acid of same concentration.

JULY:
Revision of Unit I: Some Basic Concepts of Chemistry
Unit II: Structure of Atom
Unit III: Classification of Elements and Periodicity in Properties
Modern periodic law and the present form of periodic table, periodic trends in properties of elements - atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.

Unit IV: Chemical Bonding and Molecular structure
Valence electrons, ionic bond, covalent bond; bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), hydrogen bond.

PRACTICALS:
1. Preparation of standard solution of Oxalic acid.
2. Preparation of standard solution of HCl.
3. Preparation of standard solution of Sodium carbonate.
4. Determination of strength of a given solution of Sodium Hydroxide by titrating it against standard solution of oxalic acid.

AUGUST:
Unit VIII: Redox Reactions
Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions

Unit X: s -Block Elements (Alkali and Alkaline Earth Metals)
Group 1 and Group 2 Elements
General introduction, electronic configuration, occurrence, anomalous properties of the first element of each group, diagonal relationship, trends in the variation of properties (such as ionization enthalpy, atomic and ionic radii), trends in chemical reactivity with oxygen, water, hydrogen and halogens, uses.

Preparation and Properties of Some Important Compounds:
Sodium Carbonate, Sodium Chloride, Sodium Hydroxide and Sodium Hydrogen carbonate, Biological importance of Sodium and Potassium.
Calcium Oxide and Calcium Carbonate and their industrial uses, biological importance of Magnesium and Calcium

Unit V: States of Matter: Gases and Liquids
Three states of matter, intermolecular interactions, types of bonding, melting and boiling points, role of gas laws in elucidating the concept of the molecule, Boyle's law, Charles law, Gay Lussac's law, Avogadro's law, ideal behaviour, empirical derivation of gas equation, Avogadro's number, ideal gas equation. Deviation from ideal behaviour, liquefaction of gases, critical temperature, kinetic energy and molecular speeds (elementary idea) Liquid State- vapour pressure, viscosity and surface tension (qualitative idea only, no mathematical derivations)

PRACTICAL
1.Determination of strength of a given solution of Hydrochloric acid by titrating it against standard solution of sodium carbonate.
2.Determination of strength of a given solution of Sodium Hydroxide by titrating it against standard solution of Hydrochloric acid.

SEPTEMBER
Unit V: States of Matter: Gases and Liquids (Contd.)

PRACTICAL
To analyse a given salt for an anion.

OCTOBER
Unit VI: Chemical Thermodynamics
Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics - internal energy and enthalpy, heat capacity and specific heat, measurement of U and H, Hess's law of constant heat summation, enthalpy of bond dissociation,
combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction). Introduction of entropy as a state function, Gibb's energy change for spontaneous and non-spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction).

**Unit VII: Equilibrium**
Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle.

**PRACTICALS:**
1. Determination of one anion and one cation in the given salt. **Anions**: CO$_3^{2-}$, S$^{2-}$, SO$_3^{2-}$, NO$_2^{-}$,Cl$^{-}$, Br$^{-}$, I$^{-}$, NO$_3^{-}$, CH$_3$COO$^{-}$, SO$_4^{2-}$, PO$_4^{3-}$

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

2. Detection of nitrogen, sulphur, Chlorine, bromine and iodine in an organic compound.

**NOVEMBER:**
**Unit VII: Equilibrium (Contd.)**
Ionic equilibrium, ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, buffer solution, solubility product, common ion effect (with illustrative examples).

**Unit XI: Some p -Block Elements**
**General Introduction to p -Block Elements**
**Group 13 Elements**: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous properties of first element of the group, Boron - physical and chemical properties, some important compounds, Borax, Boric acid, Boron Hydrides, Aluminium: Reactions with acids and alkalies, uses.

**Group 14 Elements**: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous behaviour of first elements. Carbon-catenation, allotropic forms, physical and chemical properties; uses of some important compounds: oxides. Important compounds of Silicon and a few uses: Silicon Tetrachloride, Silicones, Silicates and Zeolites, their uses.

**PRACTICAL**

**Determination of one anion and one cation in the given salt.**

**DECEMBER**
**Unit XII: Organic Chemistry - Some Basic Principles and Technique**
General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds.

**Unit XIII: Hydrocarbons**

**Classification of Hydrocarbons**

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

**PRACTICAL**

**Determination of one anion and one cation in the given salt.**

**JANUARY**

**Unit IX: Hydrogen**
Position of hydrogen in periodic table, occurrence, isotopes, preparation, properties and uses of hydrogen, hydrides - ionic covalent and interstitial; physical and chemical properties of water, heavy water, hydrogen peroxide - preparation, reactions and structure and use; hydrogen as a fuel.

**FEBRUARY**
Revision

**EXAM-WISE SYLLABUS BREAK-UP**

**MONDAY TEST 1**
UNIT-1 :- Some Basic Concepts of Chemistry
UNIT-2 :- Structure of Atom

**MID-TERM EXAM**
UNIT-1 :- Some Basic Concepts of Chemistry
UNIT-2 :- Structure of Atom
UNIT-3 :- Classification of Elements and Periodicity in Properties
UNIT-4 :- Chemical Bonding and Molecular structure  
Unit-10 :- s-Block Elements  
UNIT-8 :- Redox Reactions

**MONDAY TEST-2**  
UNIT-4 :- Chemical Bonding and Molecular structure  
UNIT-8 :- Redox Reactions

**MONDAY TEST-3**  
UNIT-7 :- Equilibrium  
UNIT-6 :- Thermodynamics

**ANNUAL EXAM**  
Complete Syllabus
1. **Prerequisites**

No major prerequisites are required for this course other than basic Mathematical skills. However, it will be helpful if the student has a basic knowledge of Computer Applications.

2. **Learning Outcomes**

1. Develop basic computational thinking. Learn how to reason with variables, state transitions, conditionals, and iteration.
2. Understand the notion of data types, and higher order data structures such as lists, tuples, and dictionaries.
3. Appreciate the notion of an algorithm, and understand its structure, including how algorithms handle corner cases.
4. Develop a basic understanding of computer systems - architecture, OS, mobile and cloud computing.
5. Learn basic SQL programming.
6. Learn all about cyber safety.

3. **Distribution of Marks**

<table>
<thead>
<tr>
<th>Unit No.</th>
<th>Unit Name</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Programming and Computational Thinking - 1</td>
<td>35</td>
</tr>
<tr>
<td>2.</td>
<td>Computer Systems and Organisation</td>
<td>10</td>
</tr>
<tr>
<td>3.</td>
<td>Data Management - 1</td>
<td>15</td>
</tr>
<tr>
<td>4.</td>
<td>Society, Law and Ethics - 1</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Practical</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

4.1 **Unit 1: Programming and Computational Thinking (PCT-1) (80 Theory + 70 Practical)**

- Familiarization with the basics of Python programming: a simple "hello world" program, process of writing a program, running it, and print statements; simple data-types: integer, float, string
- Introduce the notion of a variable, and methods to manipulate it (concept of L-value and R-value even if not taught explicitly)
• Knowledge of data types and operators: accepting input from the console, assignment statement, expressions, operators and their precedence.
• Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers, and divisibility.
• Notion of iterative computation and control flow: for, while, flowcharts, decision trees and pseudo code; write a lot of programs: interest calculation, primarily testing, and factorials.
• Idea of debugging: errors and exceptions; debugging: pdb, break points.
• Lists, tuples and dictionary: finding the maximum, minimum, mean; linear search on list/tuple of numbers, and counting the frequency of elements in a list using a dictionary. Introduce the notion of accessing elements in a collection using numbers and names.
• Sorting algorithm: bubble and insertion sort; count the number of operations while sorting.
• Strings: compare, concat, substring; notion of states and transitions using state transition diagrams.

4.2. Unit 2: Computer Systems and Organisation (CSO)

• Basic computer organisation: description of a computer system and mobile system, CPU, memory, hard disk, I/O, battery, power.
• Types of software: application, OS, utility, libraries.
• Language of Bits: bit, byte, MB, GB, TB, and PB.
• Boolean logic: OR, AND, NAND, NOR, XOR, NOT, truth tables, De Morgan’s laws
• Information representation: numbers in base 2, 8, 16, unsigned integers, binary addition
• Strings: ASCII, UTF8, UTF32, ISCII (Indian script code)
• Execution of a program: basic flow of compilation – program □ binary □ execution
• Interpreters (process one line at a time), difference between a compiler and an interpreter
• Running a program: Notion of an operating system, how an operating system runs a program, idea of loading, operating system as a resource manager.
• Concept of cloud computers, cloud storage (public/private), and brief introduction to parallel computing.

4.3. Unit 3: Data Management (DM-1)
Relational databases: idea of a database and the need for it, relations, keys, primary key, foreign key; use SQL commands to create a table, keys, foreign keys; insert/delete an entry, delete a table.
• SQL commands: select, project, and join; indexes, and a lot of in-class practice. □ Basics of NoSQL databases - Mongo DB.

4.4. Unit 4: Society, Law and Ethics (SLE-1) - Cyber safety
- Cyber safety: safely browsing the web, identity protection, confidentiality, social networks, cyber trolls and bullying
- Appropriate usage of social networks: spread of rumours, and common social networking sites (Twitter, LinkedIn, and Facebook) and specific usage rules.
- Safely accessing web sites: adware, malware, viruses, Trojans
- Safely communicating data: secure connections, eavesdropping, phishing and identity verification.

5. Practical

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Unit Name</th>
<th>Marks (Total=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lab Test (12 marks)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Python program (60% logic + 20% documentation + 20% code quality)</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>SQL program (at least 4 queries)</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Report File + viva (10 marks)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Report file: Minimum 20 Python programs and 8 SQL commands</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Viva voce (based on the report file)</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>Project (that uses most of the concepts that have been learnt) (See CS-XII for the rules regarding the projects)</td>
<td>8</td>
</tr>
</tbody>
</table>

5.1. 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.
- Find the largest and smallest numbers in a list.
- Find the third largest number in a list.
- Test for primarily.
- Find whether a string is a palindrome or not.
- Given two integers \( x \) and \( n \), compute \( x^n \).
- Compute the greatest common divisor and the least common multiple of two integers.
- Test if a number is equal to the sum of the cubes of its digits. Find the smallest and largest such numbers.

5.2. Data Management: SQL Commands At least the following SQL commands should be covered during the labs: create, insert, delete, select, and join. The following are some representative assignments.
- Create a student table with the student id, name, and marks as attributes where the student id is the primary key.
- Insert the details of a new student in the above table.
- Delete the details of a particular student in the above table.
- Use the select command to get the details of the students with marks more than 80.
• Create a new table (name, date of birth) by joining two tables (student id, name) and (student id, date of birth).
• Create a new table (order ID, customer Name, and order Date) by joining two tables (order ID, customer ID, and order Date) and (customer ID, customer Name, contact Name, country).

MONTH WISE SYLLABUS BREAK UP

APRIL

Unit 4: Society, Law and Ethics (SLE-1) - Cyber safety

MAY & JULY
Unit 2: Computer Systems and Organisation (CSO)

AUGUST & SEPTEMBER
Unit 1: Programming and Computational Thinking (PCT-1)

OCTOBER & NOVEMBER
Unit 1: Programming and Computational Thinking (PCT-1)

DECEMBER & JANUARY
Unit 3: Data Management (DM-1)

PROJECT WORK

TERM WISE SYLLABUS BREAK UP

MONDAY TEST -1
Unit 2, 4

MID TERM EXAMS
Unit 2, 4
Unit -1
• Familiarization with the basics of Python programming: a simple "hello world" program, process of writing a program, running it, and print statements; simple data-types: integer, float, string
• Introduce the notion of a variable, and methods to manipulate it (concept of L-value and R-value even if not taught explicitly)
• Knowledge of data types and operators: accepting input from the console, assignment statement, expressions, operators and their precedence.
  • Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers, and divisibility

MONDAY TEST -2
Unit -1
• Knowledge of data types and operators: accepting input from the console, assignment statement, expressions, operators and their precedence.
- Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers, and divisibility.
- Notion of iterative computation and control flow: for, while, flowcharts, decision trees and pseudo code; write a lot of programs: interest calculation, primarily testing, and factorials.
- Idea of debugging: errors and exceptions; debugging: pdb, break points.

**MONDAY TEST -3**

- Lists, tuples and dictionary: finding the maximum, minimum, mean; linear search on list/tuple of numbers, and counting the frequency of elements in a list using a dictionary. Introduce the notion of accessing elements in a collection using numbers and names.
- Sorting algorithm: bubble and insertion sort; count the number of operations while sorting.
- Strings: compare, concat, substring; notion of states and transitions using state transition diagrams.

Unit -3: Introduction to databases

**ANNUAL EXAMINATION**

Full syllabus
Informatics Practices (065) Session 2019-20

1. Ability to identify the functionality of various components of Computer System.
2. Ability to develop application using simple python.
3. Ability to use, develop & debug programs independently.
4. Ability to store and retrieve data using an RDBMS.
5. Ability to understand societal, legal and ethical aspect of technology.
6. Ability to ensure safety and security in cyber-space.

Distribution of Marks and Periods:

<table>
<thead>
<tr>
<th>Unit No.</th>
<th>Unit Name</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introduction to Computer System</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Introductory Python Programming</td>
<td>30</td>
</tr>
<tr>
<td>3.</td>
<td>Data Handling</td>
<td>10</td>
</tr>
<tr>
<td>4.</td>
<td>Data Management</td>
<td>15</td>
</tr>
<tr>
<td>5.</td>
<td>Society, Law and Ethics</td>
<td>10</td>
</tr>
</tbody>
</table>

70

Unit 1: Introduction of Computer System (APRIL)

Basic computer organization: Computer system – I/O Devices, CPU, memory, hard disk, battery, power, transition from a calculator to a computer and further to smart devices.

Trouble shooting with parts of computer and basic operations of operating system Basic concept of Data representation: Binary, ASCII, Unicode

Unit 2: Introduction Python Programming(AUGUST-NOVEMBER)

Familiarization with the basic of Python programming: a simple "hello world" program, process of writing a program, running it, and print statements; simple data-types: integer, float, string. Introduce the notion of variable, and methods to manipulate it (concept of L-
Tokens - keywords, identifiers, Literals, Delimiters. Knowledge of data type and operators: accepting input from the console, assignment statement, expressions, operators (assignment, arithmetic, relational and logical) and their precedence.

Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers, divisibility.

Notion of iterative computation and control flow: for ( range() , len()), while, flowcharts.

Suggested programs: finding average and grade for given marks, amount calculation for given cost-qty-discount, perimeter-wise/area-wise cost calculation, interest calculation, profit-loss, EMI, tax calculation (example from GST/Income Tax).
List and dictionary: finding the maximum, minimum, mean; linear search on a list of numbers, and counting the frequency of elements in a list using a dictionary.
Text handling: compare, concat, and substring operations (without using string module).
Introduction to Python modules: importing math (sqrt, ceil, floor, pow, fabs), random (random, randint, randrange), statistics (mean, median) modules.

**Unit 3: Data Handling (DECEMBER – JANUARY)**
Numpy 1D array, 2D array Arrays: slices, joins, and subsets.
Arithmetic operations on 2D arrays.

**Unit 4: Data Management (MAY – JULY)**
Relational databases: Concept of a database, relations, attributes and tuples, keys - candidate key, primary key, alternate key, foreign key; Degree and Cardinality of a table.
Use SQL - DDL/DML commands to CREATE TABLE, INSERT INTO, UPDATE TABLE, DELETE FROM, ALTER TABLE, MODIFY TABLE, DROP TABLE, keys, and
foreign keys; to view content of a table: SELECT-FROM-WHERE-ORDER BY alongwith BETWEEN, IN, LIKE. (Queries only on single table)

Aggregate Functions: MIN, MAX, AVG, COUNT, SUM

**Unit 5: Society, Law and Ethics (APRIL)**

Cyber safety: safely browsing the web, identity protection, confidentiality, social networks, netiquettes, digital footprint, cyber trolls and bullying. Appropriate usage of social networks: spread of rumours, and common social networking sites (Twitter, LinkedIn, and Facebook) and specific usage rules.

Safely accessing web sites: adware, malware, viruses, Trojans. Safely communicating data: secure connections, eavesdropping, and phishing and identity verification.

**Class XI Practical**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Description</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Problem solving using arithmetic operations, conditional statements and iterations with the help of a Python program 60% logic + 20% documentation + 20% code quality (To be tested on the day of the final exam)</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Problem solving using numPy (To be tested on the day of the final exam)</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>SQL - 5 Queries based on single table (To be tested on the day of the final exam)</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Report File</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>• Minimum 20 Python Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Minimum 20 SQL Queries</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Viva</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Project using the concepts learnt in the course</td>
<td>5</td>
</tr>
</tbody>
</table>
MONTH WISE SYLLABUS BREAK UP

APRIL
Unit 5: Society, Law and Ethics (SLE-1) - Cyber safety
Unit 1: Introduction of Computer System

MAY & JULY
Unit 4: Data Management

AUGUST - NOVEMBER
Unit 2: Introduction Python Programming

DECEMBER & JANUARY
Unit 3: Data Handling

PROJECT WORK

TERM WISE SYLLABUS BREAK UP

MONDAY TEST -1
Unit 5, 1

MID TERM EXAMS
Unit 1, 5, 4, 2(Partial)

ANNUAL TERM
Full Syllabus
SYLLABUS BREAK-UP CLASS XI SESSION (2019-20)
BIOLOGY (044)

General Objectives:

- To promote understanding of basic principles of Biology.
- To encourage learning of emerging knowledge and its relevance to individual and society.
- To promote rational/scientific attitude to issues related to population, environment and development.
- To enhance awareness about environmental issues, problems and their appropriate solutions.
- To create awareness amongst the learners about diversity in the living organisms and developing respect for other living beings.
- To appreciate that the most complex biological phenomena are built on essentially simple processes.

Text books for the session (2019-2020)
1. N.C.E.R.T - Biology textbook for class XI
2. Together with Biology for class XI - Publisher Rachna Sagar

MONTH-WISE SYLLABUS BREAK-UP

APRIL

UNIT III-CELL STRUCTURE AND FUNCTION
Chapter 8- Cell theory and cell as the basic unit of life: Structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; Cell envelope, cell membrane, cell wall; Cell organelles - structure and function; endo membrane system, endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus, nuclear membrane, chromatin, nucleolus.

Chapter 10- Cell division: Cell cycle, mitosis, meiosis and their significance.

Chapter 16- Digestion and absorption: Alimentary canal and digestive glands, role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats; calorific values of proteins, carbohydrates and fats; egestion; nutritional and digestive disorders - PEM, indigestion, constipation, vomiting, jaundice, diarrhoea.

MAY

Chapter 17- Breathing and Exchange of gases: Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders.

Chapter 18- Body fluids and Circulation: Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory
system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.

**Practicals**
1. Study parts of a compound microscope.
2. Study of distribution of stomata in the upper and lower surface of leaves.
3. Study of mitosis in onion root tips cells and animals cells (grasshopper) from permanent slides.
4. Study of plasmolysis in epidermal peels (e.g. Rhoeo leaves)

**JULY UNIT V - HUMAN PHYSIOLOGY**
Chapter 20 - Locomotion and movement: Types of movement - ciliary, flagellar, muscular; skeletal muscle contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal system - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

**UNIT III - CELL STRUCTURE AND FUNCTION**
Chapter 9- Biomolecules: Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids, enzymes, types, properties, enzyme action.

**UNIT II - STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS**
Chapter 5- Morphology of flowering plants: morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed.

**Practicals**
1. Test for the presence of sugar, starch, proteins and fats. To detect these in suitable plant and animal materials.
2. Study of human skeleton and different types of joints.
3. To study the effect of salivary amylase on starch.
4. Study and describe three locally available common flowering plants, one from each of the families Solanaceae, Fabaceae and Liliaceae including dissection and display of floral whorls and anther and ovary to show number of chambers. Types of root (Tap and adventitious); stem (herbaceous and woody); leaf (arrangement, shape, venation, simple and compound).
5. Study of different modifications in root, stem and leaves.
6. Study and identification of different types of inflorescence (cymose and racemose).

**PROJECT WORK**

**AUGUST UNIT IV - PLANT PHYSIOLOGY**
Chapter 11- Transport in plants: Movement of water, gases and nutrients; cell to cell transport, Diffusion, facilitated diffusion, active transport; plant-water relations, Imbibition, water potential, osmosis, plasmolysis; long distance transport of water - Absorption, apoplast, symplast, transpiration pull, root pressure and guttation; transpiration, opening and closing of stomata; Uptake and translocation of mineral nutrients - Transport of food, phloem transport, mass flow hypothesis; diffusion of gases.

Chapter 12 - Mineral nutrition: Essential minerals, macro- and micronutrients and their role; deficiency symptoms; mineral toxicity; elementary idea of
hydroponics as a method to study mineral nutrition; nitrogen metabolism, nitrogen cycle, biological nitrogen fixation.

**Chapter 13 - Photosynthesis in higher plants:** Photosynthesis as a mean of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.

**Practicals**
1. Study of osmosis by potato osmometer.
2. To study the rate of respiration in flower buds/leaf tissue and germinating seeds.
3. Study of imbibition in seeds/raisins.

**SEPTEMBER**
**UNIT I - DIVERSITY IN LIVING WORLD**
**Chapter 1 - The Living World:** Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature; tools for study of taxonomy: museums, zoological parks, herbaria, botanical gardens.

**OCTOBER**
**UNIT V - HUMAN PHYSIOLOGY**
**Chapter 19 - Excretory products and their elimination:** Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system - structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney.

**UNIT IV - PLANT PHYSIOLOGY**
**Chapter 14 - Respiration:** Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.
**Chapter 15 - Plant growth and development:** Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA; seed dormancy; vernalisation; photoperiodism.

**Practicals**
7. To test the presence of urea in urine.
8. To detect the presence of sugar in urine.
9. To detect the presence of albumin in urine.
10. To detect the presence of bile salts in urine.

**NOVEMBER**
**UNIT V - HUMAN PHYSIOLOGY**
**Chapter 21 - Neural control and coordination:** Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve
impulse; reflex action; sensory perception; sense organs; elementary structure and functions of eye and ear.

UNIT II- STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS
Chapter 6- Structural Organization in Flowering plants- Tissues; anatomy and functions of different parts of flowering plants: root, stem, leaf. Secondary growth in dicot stem and root.

Practicals
  1. Preparation and study of T.S. of dicot and monocot roots and stems (primary).

DECEMBER
Chapter 22- Chemical coordination and Integration: Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary Idea); role of hormones as messengers and regulators, hypo – and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goiter, diabetes, Addison's disease.

UNIT I- DIVERSITY IN LIVING WORLD
Chapter 3- Plant Kingdom: Salient features and classification of plants into major groups - Algae, Bryophyta, Pteridophyta, Gymnospermae and Angiospermae (three to five salient and distinguishing features and at least two examples of each category); Angiosperms – classification upto class, characteristic features and examples.

Chapter 2- Biological classification: Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups: Lichens, Viruses and Viroids.

Practicals
  1. Study of tissues and diversity in shapes and sizes of plant and animal cells (palisade cells, guard cells, parenchyma, collenchyma, sclerenchyma, xylem, phloem, squamous epithelium, muscle fibers and mammalian blood smear) through temporary/permanent slides.

  2. Study of the specimens/slides/models and identification with reasons Bacteria, Oscillatoria, Spirogyra, Rhizopus, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant and one dicotyledonous plant and one lichen.

JANUARY
Chapter 4- Animal Kingdom: Salient features and classification of animals non chordates up to phyla level and chordates up to class level (three to five salient features and at least two examples of each category).

UNIT II- STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS
Chapter 7- Animal tissues: Morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (cockroach).

FEBRUARY
Revision

TEST-WISE SYLLABUS BREAK-UP

MONDAY TEST I
UNIT III-CELL STRUCTURE AND FUNCTION
Chapter 8- Cell theory and Cell as a basic unit of life
Chapter 10- Cell Cycle and Cell division
UNIT V- HUMAN PHYSIOLOGY
Chapter 16- Digestion and absorption

MID-TERM

UNIT III-CELL STRUCTURE AND FUNCTIONS
Chapter 8- Cell: The Unit of Life
Chapter 9- Biomolecules
Chapter 10- Cell Cycle and Cell division

UNIT II- STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS
Chapter 5- Morphology of Flowering Plants

UNIT V- HUMAN PHYSIOLOGY
Chapter 16- Digestion and absorption
Chapter 17- Breathing and exchange of gases
Chapter 18- Body fluids and Circulation
Chapter 20- Locomotion and Movement

UNIT IV- PLANT PHYSIOLOGY
Chapter 11- Transport in Plants
Chapter 12- Mineral Nutrition
Chapter 13- Photosynthesis in Higher Plants

MONDAY TEST II

UNIT I- DIVERSITY IN LIVING WORLD
Chapter 1- The Living World

UNIT V - HUMAN PHYSIOLOGY
Chapter 19- Excretory Products and their elimination

UNIT IV- PLANT PHYSIOLOGY
Chapter 14- Respiration in Plants

MONDAY TEST III

UNIT IV- PLANT PHYSIOLOGY
Chapter 15- Plant Growth and Development

UNIT V - HUMAN PHYSIOLOGY
Chapter 21- Neural Control and Coordination

UNIT II- STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS
Chapter 6- Anatomy of flowering plants

ANNUAL EXAM- Full syllabus

Physics
OBJECTIVES

1. Understanding of some basic economic concepts and development of economic reasoning which the learners can apply in their day-to-day life as citizens, workers and consumers.
2. Realisation of learners' role in nation building and sensitivity to the economic issues that the nation is facing today.
3. Equipment with basic tools of economics and statistics to analyse economic issues. This is pertinent for even those who may not pursue this course beyond senior secondary stage.
4. Development of understanding that there can be more than one view on any economic issue and necessary skills to argue logically with reasoning.

TEXT BOOKS

Microeconomics
Author: Sandeep Garg (Dhanpat Rai Publications)

STATISTICS FOR ECONOMICS

A-ONE ECONOMICS ELEMENTARY STATISTICS for class XI by I.D.MANGLA (GYAN SAGAR PUBLICATIONS)

REFERENCE BOOKS

• STATISTICS FOR ECONOMICS for class XI
  Author - Sandeep Garg (Dhanpat Rai Publications)

MONTH-WISE SYLLABUS BREAK-UP (CLASS XI)

APRIL AND MAY
Microeconomics
Unit-1 Introduction
Meaning of Microeconomics and Macroeconomics; positive and normative economics.
What is an economy? Central problems of an economy: What, how and for whom to produce; concepts of production possibility frontier and opportunity cost.
Unit-2 Consumer equilibrium & Demand
Consumer’s equilibrium - meaning of utility, marginal utility, law of diminishing marginal utility.
Consumer’s equilibrium - conditions of consumer’s equilibrium using marginal utility analysis.
Indifference curve analysis of consumer’s equilibrium-the consumer’s budget (budget set and budget line), preferences of the consumer (indifference curve, indifference map) and conditions of consumer’s equilibrium.
Demand, market demand, determinants of demand
Demand schedule, demand curve, movement along and shifts in the demand curve; price elasticity of demand-factors affecting price elasticity of demand; measurement of price elasticity of demand- percentage-change method

**JULY**
Statistics
Unit 1: Introduction
Chapter No. 2 INTRODUCTION
What is Economics? ; Meaning, scope and importance of statistics in Economics
Unit 2: Collection, Organisation and Presentation of data
Chapter No.3 Collection of Primary & Secondary Data
Collection of data - sources of data - primary and secondary; how basic data is collected; methods of collecting data; some important sources of secondary data: Census of India and National Sample Survey Organisation.
Chapter No.4 Organisation of Data
Organisation of Data: Meaning and types of variables; Frequency Distribution.

**AUGUST**
Statistics
Presentation of Data: Tabular Presentation
Chapter No.5 Tabular Presentation
Chapter No.6 Diagrammatic Presentation
Chapter No.7 Graphic Presentation
Presentation of Data: Diagrammatic Presentation of Data: (i) Geometric forms (bar diagrams and pie diagrams), (ii) Frequency diagrams (histogram, polygon and ogive) and (iii) Arithmetic line graphs (time series graph).

**Microeconomics**
Unit-3 Producer Behaviour and supply
Supply, market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in the supply curve; price elasticity of supply ;measurement of price elasticity of supply - percentage-change method

**SEPTEMBER**
Microeconomics
Unit-4 Determination of equilibrium price, shifts in demand & supply
Simple applications of tools of Demand and Supply: Price ceiling, price floor

□ REVISION for Mid Term Examination

**OCTOBER**
Unit 3: Statistical Tools and Interpretation
Chapter No.8 Measures of Central Tendency
Chapter No.9 Positional Average &Partition values
Measures of Central Tendency-Arithmetic Mean
Partition Values –Median, Quartiles, Mode
(For all the numerical problems and solutions, the appropriate economic interpretation may be attempted. This means, the students need to solve the problems and provide interpretation for the results derived.)
Measures of Central Tendency- mean (simple), median and mode

**NOVEMBER**
Microeconomics

Unit-4   Forms of market
  Perfect Competition-Features; Determination of market equilibrium and effects of shifts in demand and supply.
  Other market forms -monopoly, monopolistic competition, oligopoly-their meaning and features.

DECEMBER
Statistics
Chapter No. 11
Measures of Correlation
Correlation - meaning, scatter diagram; Measures of correlation - Karl Pearson's method (two variables ungrouped data) Spearman's rank correlation.
Ch.10 Measures of Dispersion (Stats)
Measures of Dispersion - absolute dispersion (range, quartile deviation, mean deviation and standard deviation); relative dispersion (coefficient of quartile-deviation, co-efficient of mean deviation, (Coefficient of variation); Lorenz Curve: Meaning and its application.

JANUARY
Statistics
Ch.12    INDEX NUMBERS
Introduction to Index Numbers - meaning, types - wholesale price index, consumer price index and index of industrial production, uses of index numbers; Inflation and index numbers.

Unit-3    Producer Behaviour and supply
  Production function: short run and long run Total Product, Average Product and Marginal Product. Returns to a factor.
  Cost and Revenue; Short run costs-total cost, total fixed cost, total variable cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationship.
  Revenue-total, average and marginal revenue-meaning and their relationships
  Producer’s Equilibrium-meaning and its conditions in terms of marginal revenue-marginal cost.

PROJECT WORK         Part C: Developing Projects in Economics
The students may be encouraged to develop projects, which have primary data, secondary data or both. Case studies of a few organisations / outlets may also be encouraged. Under this the students will do one project each from Part A and Part B. Some of the examples of the projects are as follows (they are not mandatory but suggestive) :(i) A report on demographic structure of your neighbourhood.

   (ii) Changing consumer awareness amongst households. (iii)
     Dissemination of price information for growers and its impact on consumers.
(iv) Study of a cooperative institution: milk cooperatives, marketing cooperatives, etc.
(v) Case studies on public private partnership, outsourcing and outward Foreign Direct Investment.
(vi) Global warming.
(vii) Designing eco-friendly projects applicable in school such as paper and water recycle.

The idea behind introducing this unit is to enable the students to develop the ways and means by which a project can be developed using the skills learned in the course. This includes all the steps involved in designing a project starting from choosing a title, exploring the information relating to the title, collection of primary and secondary data, analysing the data, presentation of the project and using various statistical tools and their interpretation and conclusion.

• REVISION
  FEBRUARY

• REVISION

TEST-WISE SYLLABUS BREAK-UP
MONDAY TEST 1
Microeconomics
Unit-1 Introduction
Unit-2 Consumer equilibrium & Demand

MID-TERM EXAMS
Microeconomics
Unit-1 Introduction
Unit-2 Consumer equilibrium & Demand
Unit-3 Producer Behaviour and supply
  Ch. Theory of supply and elasticity of supply only
Unit-4 Determination of equilibrium price, shifts in demand & supply

Statistics:
Ch. No. 2 Introduction
  Ch. No.3 Collection Of Primary & Secondary Data
  Ch. No.4 Organisation of Data
  Ch. No.5 Tabular Presentation
  Ch. No.6 Diagrammatic Presentation
  Ch. No.7 Graphic Presentation

MONDAY TEST 2
Microeconomics
Unit-4 Determination of equilibrium price, shifts in demand & supply

Statistics:
Chapter No.8 Measures of Central Tendency
Chapter No.9 Positional Average & Partition values
MONDAY TEST 3
Microeconomics
Unit-4 Forms of market
Statistics:
Ch.10 Measures of Dispersion

ANNUAL EXAMINATION

☐ Full Syllabus
OBJECTIVES

- To develop students with an understanding of the processes of business and its environment.
- To acquaint students with the dynamic nature and inter-dependent aspects of business.
- To develop an interest in the theory and practice of business, trade and industry.
- To familiarise students with the theoretical foundations of the process of organising and managing the operations of a business firm.
- To help students appreciate the economic and social significance of business activity and the social cost and benefits arising therefrom.
- To acquaint students with the practice of managing the operations and resources of business.
- To enable students to act more effectively and responsibly as consumers, employers, employees and citizens.
- To develop a business attitude and skills in students.
- To inculcate appropriate attitude and develop skills among students to pursue higher education, world of work including self employment.

TEXT BOOK

- NCERT : Business Studies – Textbook for Class XI

REFERENCE BOOK

- Business Studies - A textbook for Class XI
  Author - SubhashDey (Geeta Publishing House)

MONTH-WISE SYLLABUS BREAK-UP

APRIL

NATURE AND PURPOSE OF BUSINESS

Concept and characteristics of business,
Business, profession and employment - Meaning and their distinctive features
Objectives of business - Economic and social, role of profit in business
Classification of business activities: Industry and Commerce
Industry - types: primary, secondary, tertiary - Meaning and sub types
Commerce - trade and auxiliaries to trade: banking, insurance, transportation, warehousing, communication, and advertising
Business risks - Meaning, nature and causes.
History of commerce in India

MAY

FORMS OF BUSINESS ORGANISATION

Sole Proprietorship- meaning, features, merits and limitations
JHFB – meaning and features
Partnership- features, types, merits and limitations of partnership, registration of a partnership firm, partnership deed, type of partners and types of partnerships
Cooperative society: meaning, features, merits and limitations, types
Company: private and public company - features, merits and limitations
Meaning of One Person Company.

**JULY**

**FORMS OF BUSINESS ORGANISATION**
Formation of a company- four stages, important documents.
Starting a business - basic factors

**INTERNAL TRADE**
Services rendered by a wholesaler and a retailer
Types of retail trade - Itinerant and small scale fixed shops
Large scale retailers - Departmental stores, chain stores, mail order business
Concept of automatic vending machine
Chambers of Commerce and Industry: Basic functions
Main documents used in internal trade and Terms of Trade.
GST (Goods and Services Tax): Concept and key-features

**AUGUST**

**BUSINESS SERVICES**
Postal services: mail (UPC, registered post, parcel, speed post and courier services) Banking: Types of bank accounts
Banking: Banking services, e-banking
Insurance: principles, concept of life, health, fire and marine insurance.

**SMALL BUSINESS**
Small scale enterprise as defined by MSMED Act 2006
Role of small business in India with special reference to rural areas
Government schemes and agencies for small scale industries (NSIC and DIC)
Entrepreneurship Development (ED): Concept, Characteristics and Need
Process Entrepreneurship Development: Start-up India Scheme, ways to fund start-up
Intellectual Property Rights and Entrepreneurship

**SEPTEMBER**

**SOURCES OF BUSINESS FINANCE**
Concept of business finance
Owners’ funds- equity shares preferences share, retained earnings
Project.
**OCTOBER**

**SOURCES OF BUSINESS FINANCE**
Global Depository receipt (GDR), American Depository Receipt (ADR) and International Depository Receipt (IDR) concept
Borrowed funds: debentures and bonds, loan from financial institution and commercial banks, public deposits, trade credit, Inter Corporate Deposits (ICD).

**EMERGING MODES OF BUSINESS**
e-business - scope and benefits, resources required for successful e-business implementation, online transactions, payment mechanism, security and safety of business transactions
Smart cards and ATM’s meaning and utility

**NOVEMBER**

**EMERGING MODES OF BUSINESS**
Outsourcing

**SOCIAL RESPONSIBILITY OF BUSINESS AND BUSINESS ETHICS**
Concept of social responsibility
Case for social responsibility
Responsibility towards owners, investors, consumers, employees, government and community
Environment protection and business
Business ethics - concept and elements

**PRIVATE PUBLIC AND GLOBAL ENTERPRISES**
Private sector and public sector enterprises
Forms of public sector enterprises: Departmental Undertakings, Statutory Corporation and Government Company
Global enterprises, Joint ventures, Public Private Partnership

**DECEMBER**

**PRIVATE PUBLIC AND GLOBAL ENTERPRISES**
Government policy towards Public Sector Enterprises.
Global enterprises, Joint ventures, Public Private Partnership

**INTERNATIONAL BUSINESS**
Meaning, difference between internal trade and external trade, characteristics, problems and advantages of international trade
Export Trade
Import Trade
World Trade Organization (WTO) : meaning and objectives

JANUARY
INTERNATIONAL BUSINESS
Import Trade
World Trade Organization (WTO) : meaning and objectives

PROJECT
Revision
FEBRUARY
Revision

TEST-WISE SYLLABUS BREAK-Up(paper 2)

MONDAY TEST 1
Nature and purpose of Business
Forms of Business Organisation(Sole Proprietorship, Joint Hindu Family Business, Partnership)

MONDAY TEST 2
Internal Trade

MID-TERM EXAMS
Nature and purpose of Business
Forms of Business Organisation
Business Services.
Small Business
Internal Trade

MONDAY TEST 3
Sources of Business Finance.
ANNUAL EXAMINATION
Full Syllabus
Objectives:
- To familiarize the students with accounting as an information system;
- To acquaint the students with basic concepts of accounting and accounting standards;
- To develop the skills of using accounting equation in processing business transactions;
- To develop an understanding about recording of business transactions and preparation of financial statements;
- To enable the students with accounting for reconstitution and dissolution of partnership firms;
- To enable the students to understand and analyse the financial statements; and
- To familiarize students with the fundamentals of computerized system of accounting.

TEXTBOOK
T S GREWAL’S - DOUBLE ENTRY BOOK KEEPING , SULTAN CHAND EDUCATIONAL PUBLISHERS

REFERENCE BOOK
NECRT - DOUBLE ENTRY BOOK KEEPING

MONTH-WISE SYLLABUS BREAK-UP

APRIL

Part A: Financial Accounting - I

Unit 1: Theoretical Framework - Introduction to Accounting

Accounting- objectives, advantages and limitations, types of accounting information; users of accounting information and their needs.

Basic accounting terms: business transaction, account, capital, drawings, liability (Non - current and current); asset (Non - current; tangible and intangible assets and current assets), receipts (capital and revenue), expenditure (capital, revenue and deferred), expense, income, profits, gains and losses, purchases, purchases returns, sales, sales returns, stock, trade receivables (debtors and bills receivable), trade payables (creditors and bills payable), goods, cost, vouchers, discount - trade and cash.

Theory Base of Accounting
- Bases of accounting - cash basis and accrual basis.

Unit 2: Accounting Process and Special Accounting Treatment

Accounting equation: analysis of transactions using accounting equation.
MAY

Unit 2: Accounting Process and Special Accounting Treatment

Recording of Transactions
Rules of debit and credit: for assets, liabilities, capital, revenue and expenses. Origin of transactions- source documents (invoice, cash memo, pay in slip, cheque ), preparation of vouchers - cash (debit and credit) and non cash (transfer).
Books of original entry: format and recording - Journal. Ledger - format, posting from journal

JULY

Unit 2: Accounting Process and Special Accounting Treatment - Recording of Transactions

Cash book and other special purpose books, balancing of accounts.

Unit 1: Theoretical Framework - Theory Base of Accounting

Fundamental accounting assumptions: going concern, consistency, and accrual. Accounting principles: accounting entity, money measurement, accounting period, full disclosure, materiality, prudence, cost concept, matching concept and dual aspect.

Unit 2: Accounting Process and Special Accounting Treatment - Recording of Transactions


PROJECT WORK

AUGUST

Unit 2: Accounting Process and Special Accounting Treatment

Recording of Transactions

Trial balance: objectives and preparation
(Scope: Trial Balance with balance method only)

Unit 2: Accounting Process and Special Accounting Treatment - Depreciation, Provisions and Reserves

Depreciation: concept need and factors affecting depreciation; methods of computation of depreciation: straight line method, written down value method (excluding change in method)Accounting treatment of depreciation: by charging to asset account, by creating provision for depreciation/ accumulated depreciation account, treatment of disposal of asset.
SEPTEMBER

REVISION

Unit 2: Accounting Process and Special Accounting Treatment

Recording of Transactions - Depreciation, Provisions and Reserves

Depreciation: concept, need and factors affecting depreciation; methods of computation of depreciation: straight line method, written down value method (excluding change in method)

Accounting treatment of depreciation: by charging to asset account, by creating provision for depreciation/ accumulated depreciation account, treatment of disposal of asset.

Provisions and reserves: concept, objectives and difference between provisions and reserves; types of reserves- revenue reserve, capital reserve, general reserve and specific reserves.

OCTOBER

Unit 2: Accounting Process and Special Accounting Treatment

Recording of Transactions - Depreciation, Provisions and Reserves

Depreciation: concept, need and factors affecting depreciation; methods of computation of depreciation: straight line method, written down value method (excluding change in method)

Accounting treatment of depreciation: by charging to asset account, by creating provision for depreciation/ accumulated depreciation account, treatment of disposal of asset.

Provisions and reserves: concept, objectives and difference between provisions and reserves; types of reserves- revenue reserve, capital reserve, general reserve and specific reserves.

Accounting for Bills of Exchange

Bills of exchange and promissory note: definition, features, parties, specimen and distinction.

Important terms: term of bill, due date, days of grace, date of maturity, discounting of bill, endorsement of bill, bill sent for collection, dishonour of bill, noting of bill, retirement and renewal of a bill.

Accounting treatment of bill transactions.

NOVEMBER

Unit 2: Accounting Process and Special Accounting Treatment

Accounting for Bills of Exchange

Accounting treatment of bill transactions.

Recording of Transactions - Rectification of Errors

Errors: types-errors of omission, commission, principles, and compensating;
their effect on Trial Balance.
Detection and rectification of errors; preparation of suspense account.

Part B: Financial Accounting - II
Unit 3: Financial Statements of Sole Proprietorship: From Complete and Incomplete Records
Financial Statements: objective and importance.
Profit and loss account: gross profit, operating profit and net profit.
Balance Sheet: need, grouping, marshalling of assets and liabilities.
Preparation of Trading and Profit and Loss Account and Balance Sheet of sole proprietorship.

DECEMBER
Part B: Financial Accounting - II
Unit 3: Financial Statements of Sole Proprietorship: From Complete and Incomplete Records
Financial Statements: objective and importance.
Profit and loss account: gross profit, operating profit and net profit.
Adjustments in preparation of financial statements: with respect to closing stock, outstanding expenses, prepaid expenses, accrued income, income received in advance, depreciation, bad debts, provision for doubtful debts, provision for discount on debtors, manager's commission, abnormal loss, goods taken for personal use and goods distributed as free samples.
Preparation of Trading and Profit and Loss Account and Balance Sheet of sole proprietorship.

Incomplete records: use and limitations. Ascertainment of profit/loss by statement of affairs method.

JANUARY
Part B: Financial Accounting - II
Unit 3: Financial Statements of Sole Proprietorship: From Complete and Incomplete Records.
Ascertainment of profit/loss by statement of affairs method

Unit 5: Computers in Accounting
Introduction to Computer and Accounting Information System (AIS):
Introduction to computers (Elements, Capabilities, Limitations of Computer system),
Introduction to operating software, utility software and application software.
Introduction to Accounting Information System (AIS), as a part of MIS Automation of Accounting Process. Meaning
Stages in automation (a) Accounting process in a computerised environment (Comparison between manual accounting process and Computerised accounting process.) (b) Sourcing of accounting Software (Kinds of software: readymade software; customised software and tailormade software; Generic Considerations
before sourcing accounting software)(c)\Creation of Account groups and hierarchy (d) Generation of reports - Trial balance, Profit and Loss account and Balance Sheet.

Scope:
The scope of the unit is to understand accounting as an information system for the generation of accounting information and preparation of accounting reports. It is presumed that the working knowledge of Tally software will be given to the students for the generation of accounting software.

FEBRUARY - REVISION

TEST-WISE SYLLABUS BREAK-UP

CLASS XI SESSION 2019-20

ACCOUNTANCY

MONDAY TEST 1

Part A: Financial Accounting - I

Unit 1: Theoretical Framework

Introduction to Accounting

Introduction to Accounting

Basic Accounting terms

Unit 2: Accounting Process and Special Accounting Treatment

Accounting equation

MID TERM

Unit 1: Theoretical Framework

Unit 2: Accounting Process and Special Accounting Treatment


Ledger, Cash Book, Other Subsidiary books, Trial Balance, Bank Reconciliation Statement

MONDAY TEST 2

Unit 2: Accounting Process and Special Accounting Treatment

Depreciation, Provisions and Reserves

MONDAY TEST 3

Unit 2: Accounting Process and Special Accounting Treatment

Accounting for Bills of Exchange

FINAL TERM

FULL SYLLABUS
**Rationale**: At the senior secondary level students who opt Political Science are given an opportunity to get introduced to the diverse concerns of a Political Scientist. At this level there is a need to enable students to engage with political processes that surround them and provide them with an understanding of the historical context that has shaped the present. The different courses introduce the students to the various streams of the discipline of Political Science: Political Theory, Indian Politics and International Politics. Concerns of the other two streams - Comparative Politics and Public Administration - are accommodated at different places in these courses. In introducing these streams, special care has been taken not to burden the students with the current jargon of the discipline. The basic idea here is to lay the foundations for a serious engagement with the discipline at the under graduation stage.

**Objectives: Indian Constitution at Work**

Enable students to understand the historical processes and the circumstances in which the Constitution was drafted.

Provide opportunity for students to become familiar with the diverse visions that guided the makers of the Indian Constitution.

Enable students to identify certain key features of the Constitution and compare these to other constitutions in the world. □ Analyse the ways in which the provisions of the Constitution have worked in real political life.

**Political Theory**: Develop the skills for logical reasoning and abstraction. □ Inculcate attention to and respect for viewpoints other than one's own.

Introduce students to the different political thinkers in relation to a concept and in everyday social life.

Enable students to meaningfully participate in and develop internal concerns of the political life that surrounds them. □ Encourage the students to analyse any unexamined prejudices that one may have inherited.

**Contemporary World Politics**: Enable the students to expand their horizons beyond India and make sense of the political map of contemporary world.

Familiarise the students with some of the key political events and processes in the post cold war era.

Equip students to be conscious of the way in which global events and processes shape our everyday lives.

Strengthen their capacity for political analysis by thinking of contemporary developments in a historical perspective.

**Politics in India after Independence**: Enable students to become familiar with some of the key political events and figures in the post-independence period.
Develop skills of political analysis through an understanding of events and processes of recent history.

Develop their capacity to link macro processes with micro situations and their own life.

Encourage the students to take a historical perspective of making sense of contemporary India.

COURSE CONTENT

Part A: Indian Constitution at Work


I ST MONTHLY TEST—Chapter 1 and 2

3. Election and Representation: Elections and Democracy, Election System in India, Reservation of Constituencies, Free and Fair Elections, Electoral Reforms (JULY)


5. Executive: What is an Executive? Different Types of Executive. Parliamentary Executive in India, Prime Minister and Council of Ministers. Permanent Executive: Bureaucracy. (AUGUST)


8. Local Governments: Why do we need Local Governments? Growth of Local Government in India, 73rd and 74th Amendments, implementation of 73rd and 74th Amendments. (AUGUST)


MID-TERM EXAMS BOOK-1 Chapters 1 to 9

Part B: Political Theory


IIND MONTHLY TEST –Chapters 10 and 11


IIIRD MONDAY TEST- Chapters 12,13,14

15. Citizenship  : What is citizenship? Citizen and Nation, Universal Citizenship, Global Citizenship (DECEMBER)


ANNUAL EXAMINATION

Full syllabus Part A and Part B

Prescribed Books:
1. Indian Constitution at work, Class XI, Published by NCERT
2. Political Theory, Class XI, Published by NCERT

PROJECT WORK: 20 MARKS