

# LOYOLA CONVENT SCHOOL

**Vidyalaya Marg, Dumardaga, Booty, Ranchi**

**An ISO 9001 : 2000 Certified School, Affiliated to CBSE, New Delhi**

**Session : 2021-22**



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# Syllabus of Class-XI

## Subject - English Core (301)

### Term Wise Syllabus

SECTION	TERM I	WEIGHTAGE (IN MARKS)	TERM II	WEIGHTAGE (IN MARKS)
A	<b>Reading Comprehension:</b> <ul style="list-style-type: none"> <li>Unseen passage (factual, descriptive or literary/ discursive or persuasive)</li> <li>Case Based Unseen (Factual) Passage</li> </ul>	8 + 5 = 13	<b>Reading Comprehension:</b> <ul style="list-style-type: none"> <li>Unseen passage (factual, descriptive or literary /discursive or persuasive)</li> <li>Unseen passage for Note Making and Summarising</li> </ul>	8 + 5 = 13
B	<b>Creative Writing Skills and Grammar:</b> <p><u>Short Writing Tasks</u></p> <ul style="list-style-type: none"> <li>Notice Writing</li> </ul> <p><u>Long Writing Tasks</u></p> <ul style="list-style-type: none"> <li>Business or Official Letters( Making enquiries, registering complaints, asking for or giving information, placing orders and sending replies)</li> <li>Speech</li> </ul> <p><u>Grammar</u></p> <ul style="list-style-type: none"> <li>Determiners</li> <li>Tenses</li> <li>Re-ordering of Sentences</li> </ul> <p>{MCQs on Gap filling/ Transformation of Sentences}</p>	3 + 5 + 4 = 12	<b>Creative Writing Skills and Grammar:</b> <p><u>Short Writing Tasks</u></p> <ul style="list-style-type: none"> <li>Posters</li> </ul> <p><u>Long Writing Tasks</u></p> <ul style="list-style-type: none"> <li>Official Letters: e.g. to school/college authorities (regarding admissions, school issues, requirements / suitability of courses)</li> <li>Debate</li> </ul> <p><u>Grammar</u></p> <ul style="list-style-type: none"> <li>Determiners</li> <li>Tenses</li> <li>Re-ordering of Sentences</li> </ul> <p>{MCQs on Gap filling/ Transformation of Sentences }</p>	3 + 5 + 4 = 12
C	<b>Literature:</b> Literary-prose/poetry extracts ( seen- texts ) comprehension and appreciation. <b>(Two Extracts)</b> <b>Questions Based on Texts to assess</b> comprehension and appreciation, analysis, inference, extrapolation <p><u>Book-Hornbill:</u></p> <ul style="list-style-type: none"> <li>The Portrait of a Lady (<i>Prose</i>)</li> <li>A Photograph (<i>Poem</i>)</li> <li>"We're Not Afraid to Die... if We Can All Be Together" (<i>Prose</i>)</li> <li>Discovering Tut: the Saga Continues</li> <li>The Laburnum Top (<i>Poem</i>)</li> <li>Landscape of the Soul (<i>Prose</i>)</li> </ul> <p><u>Book-Snapshots:</u></p> <ul style="list-style-type: none"> <li>The Summer of the Beautiful White Horse(<i>Prose</i>)</li> <li>The Address (<i>Prose</i>)</li> <li>Ranga's Marriage (<i>Prose</i>)</li> </ul>	<b>9 Marks for Hornbill + 6 Marks for Snapshots = 15 Marks</b>	<b>Literature:</b> Questions based on extracts/texts to assess comprehension and appreciation, analysis, inference, extrapolation <p><u>Book-Hornbill:</u></p> <ul style="list-style-type: none"> <li>The Voice of the Rain (<i>Poem</i>)</li> <li>The Ailing Planet: The Green Movement's Role (<i>Prose</i>)</li> <li>The Browning Version( <i>Play</i>)</li> <li>Childhood (<i>Poem</i>)</li> <li>Silk Road (<i>Prose</i>)</li> </ul> <p><u>Book-Snapshots:</u></p> <ul style="list-style-type: none"> <li>Albert Einstein at School (<i>Prose</i>)</li> <li>Mother's Day (<i>Play</i>)</li> <li>Birth ( <i>Prose</i>)</li> </ul>	<b>9 Marks for Hornbill + 6 Marks for Snapshots = 15 Marks</b>
	<b>TOTAL</b>	<b>40</b>	<b>TOTAL</b>	<b>40</b>
	<b>ASL</b>	<b>10</b>	<b>ASL</b>	<b>10</b>
	<b>GRAND TOTAL</b>	<b>40 + 10 = 50 MARKS</b>	<b>GRAND TOTAL</b>	<b>40 + 10 = 50 MARKS</b>

## Subject - Hindi Core (302)

### हिंदी (आधार) (कोड सं. 302) कक्षा –11वीं (2021-22)

परीक्षा भार विभाजन			
विषयवस्तु		उपभार	कुलभार
1	अपठित गद्यांश (चिंतन क्षमता एवं अभिव्यक्ति कौशल पर बहुविकल्पात्मक प्रश्न पूछे जाएंगे)	15	
	अ दो अपठित गद्यांशों में से कोई एक गद्यांश करना होगा। (450-500 शब्दों के) (1 अंक x 10 प्रश्न)	10	10
	ब दो अपठित पद्यांशों में से कोई एक पद्यांश करना होगा। (250-250 शब्दों के) (1 अंक x 5 प्रश्न)	05	05
2	कार्यालयी हिंदी और रचनात्मक लेखन ('अभिव्यक्ति और माध्यम' पुस्तक के आधार पर)	05	
	अ शब्दकोश से संबंधित 5 बहुविकल्पीय प्रश्न (1 अंक x 5 प्रश्न)	05	05
3	पाठ्यपुस्तक आरोह भाग – 1 से बहुविकल्पात्मक प्रश्न	15	
	अ पठित काव्यांश पर पाँच बहुविकल्पीय प्रश्न (1 अंक x 05 प्रश्न)	05	
	ब पठित गद्यांश पर पाँच बहुविकल्पीय प्रश्न। (1 अंक x 05 प्रश्न)	05	
	स पठित पाठों पर पाँच बहुविकल्पीय प्रश्न। (1 अंक x 05 प्रश्न)	05	
4	अनुपूरक पाठ्यपुस्तक वितान भाग-1 से बहुविकल्पात्मक प्रश्न	05	
	अ पठित पाठों पर पाँच बहुविकल्पीय प्रश्न। (1 अंक x 05 प्रश्न)	05	
5	आंतरिक मूल्यांकन		10
	श्रवण तथा वाचन	10	
कुल अंक			50

सत्र-1 2021-22 में निम्नलिखित पाठ सम्मिलित किए गए हैं –

#### पाठ्यपुस्तक - आरोह भाग – 1

गद्य खंड	काव्य खंड
प्रेमचंद - नमक का दारोगा	कबीर - (i) हम तो एक एक करि जानां। (ii) संतों देखत जग बौराना।
कृष्णा सोबती - मियाँ नसीरुद्दीन	मीरा - (i) मेरे तो गिरधर गोपाल, दूसरो न कोई (ii) पग घुंघरू बांधी मीरां नाची
शेखर जोशी - गलता लोहा	सुमित्रानंदन पंत - वे आँखें

अभिव्यक्ति और माध्यम	अनुपूरक पाठ्यपुस्तक - वितान भाग – 1
शब्दकोश, संदर्भ ग्रंथों की उपयोगी विधि और परिचय	कुमार गंधर्व - भारतीय गायिकाओं में बेजोड़ : लता मंगेशकर

परीक्षा भार विभाजन द्वितीय सत्र			
विषयवस्तु			उप भार
			कुल भार
1	कार्यालयी हिंदी और रचनात्मक लेखन		20
1	दी गई स्थिति / घटना के आधार पर रचनात्मक लेखन (विकल्प सहित) (निबंधात्मक प्रश्न) (5 अंक x 1 प्रश्न)	05	
2	औपचारिक/अनौपचारिक पत्र (निबंधात्मक प्रश्न) (5 अंक x 1 प्रश्न)	05	
3	व्यावहारिक लेखन (प्रतिवेदन, प्रेस-विज्ञप्ति, परिपत्र, कार्यसूची/कार्यवृत्त से संबंधित दो लघु उत्तरीय प्रश्न - एक तीन व एक दो अंक का) (विकल्प सहित) (3 अंक x 1 प्रश्न) + (2 अंक x 1 प्रश्न)	05	
4	जनसंचार माध्यम और पत्रकारिता के विविध आयामों पर से संबंधित दो लघु उत्तरीय प्रश्न-एक तीन व एक दो अंक का) (विकल्प सहित) (3 अंक x 1 प्रश्न) + (2 अंक x 1 प्रश्न)	05	
2	पाठ्यपुस्तक आरोह भाग - 2 तथा अनुपूरक पाठ्यपुस्तक वितान भाग-2		20
1	काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 50-60 शब्दों में) (3 अंक x 2 प्रश्न)	6	
2	गद्य खंड पर आधारित चार प्रश्नों में से किन्हीं तीन प्रश्नों के उत्तर (लगभग 50-60 शब्दों में) (3 अंक x 3 प्रश्न)	9	
3	अनुपूरक पाठ्यपुस्तक वितान भाग-2 के पठित पाठों पर तीन अंक का एक तथा दो अंक का एक प्रश्न पूछा जाएगा (विकल्प सहित) (1 X 3 )+(1 X 2 )	5	
3	आंतरिक मूल्यांकन		10
	परियोजना कार्य	10	
कुल अंक			50

सत्र-2 2021-22 में निम्नलिखित पाठ सम्मिलित किए गए हैं –

### पाठ्यपुस्तक - आरोह भाग - 1

काव्य खंड	गद्य खंड
भवानी प्रसाद मिश्र - घर की याद	कृष्णनाथ - स्पीति में बारिश
दुष्यंत कुमार - गज़ल	कृश्चंदर - जामुन का पेड़
निर्मला पुतुल - आओ, मिलकर बचाएँ	जवाहरलाल नेहरू - भारत माता

### **अभिव्यक्ति और माध्यम**

1. कार्यालयी लेखन और प्रक्रिया
2. स्ववृत्त लेखन और रोजगार संबंधी आवेदन पत्र
3. जनसंचार माध्यम
4. पत्रकारिता के विविध आयाम

### **अनुपूरक पाठ्यपुस्तक - वितान भाग – 1**

1. अनुपम मिश्र - राजस्थान की रजत बूँदें
2. बेबी हालदार - आलो - आँधारि

### **प्रस्तावित पुस्तकें:**

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

## Subject - Mathematics (041)

### COURSE STRUCTURE

#### CLASS XI (2021-22)

#### TERM - I

One Paper

**90 Minutes**

**Max Marks: 40**

No.	Units	Marks
I.	Sets and Functions	11
II.	Algebra	13
III.	Coordinate Geometry	6
IV.	Calculus	4
V.	Statistics and Probability	6
	Total	40
	Internal Assessment	10
<b>Total</b>		<b>50</b>

\*No chapter-wise weightage. Care to be taken to cover all the chapters.

#### Unit-I: Sets and Functions

##### 1. Sets

Sets and their representations. Empty set. Finite and Infinite sets. Equal sets. Subsets. Subsets of a set of real numbers especially intervals (with notations). Power set. Universal set. Venn diagrams. Union and Intersection of sets.

##### 2. 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 ( $\mathbb{R} \times \mathbb{R}$  only). Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. 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, exponential, logarithmic and greatest integer functions, with their graphs.

## Unit-II: Algebra

### 1. Complex Numbers and Quadratic Equations

Need for complex numbers, especially  $\sqrt{-1}$ , to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane. Statement of Fundamental Theorem of Algebra, solution of quadratic equations (with real coefficients) in the complex number system.

### 2. Sequence and Series

Sequence and Series. Arithmetic Progression (A. P.). Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of  $n$  terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.

## Unit-III: Coordinate Geometry

### 1. Straight Lines

Brief recall of two dimensional geometry from earlier classes. 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. Distance of a point from a line.

## Unit-IV: Calculus

### 1. Limits

Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions

## Unit-V: Statistics and Probability

### 1. Statistics

Measures of Dispersion: Range, mean deviation, variance and standard deviation of ungrouped/grouped data.

INTERNAL ASSESSMENT	10 MARKS
Periodic Test	5 Marks
Mathematics Activities: Activity file record +Term end assessment of one activity & Viva	5 Marks

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

## TERM - II

One Paper

Max Marks: 40

No.	Units	Marks
I.	Sets and Functions (Cont.)	8
II.	Algebra (Cont.)	11
III.	Coordinate Geometry (Cont.)	9
IV.	Calculus (Cont.)	6
V.	Statistics and Probability (Cont.)	6
	Total	40
	Internal Assessment	10
Total		50

### Unit-I: Sets and Functions

#### 1. 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. Truth of the identity  $\sin^2 x + \cos^2 x = 1$ , for all  $x$ . Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing  $\sin(x \pm y)$  and  $\cos(x \pm y)$  in terms of  $\sin x$ ,  $\sin y$ ,  $\cos x$  &  $\cos y$  and their simple applications. Deducing identities like the following:

$$\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}, \cot(x \pm y) = \frac{\cot x \cot y \mp 1}{\cot y \pm \cot x}$$

$$\sin \alpha \pm \sin \beta = 2 \sin \frac{1}{2}(\alpha \pm \beta) \cos \frac{1}{2}(\alpha \mp \beta)$$

$$\cos \alpha + \cos \beta = 2 \cos \frac{1}{2}(\alpha + \beta) \cos \frac{1}{2}(\alpha - \beta)$$

$$\cos \alpha - \cos \beta = -2 \sin \frac{1}{2}(\alpha + \beta) \sin \frac{1}{2}(\alpha - \beta)$$

Identities related to  $\sin 2x$ ,  $\cos 2x$ ,  $\tan 2x$ ,  $\sin 3x$ ,  $\cos 3x$  and  $\tan 3x$ .



## Unit-II: Algebra

### 1. 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 method of finding a solution of system of linear inequalities in two variables.

### 2. Permutations and Combinations

Fundamental principle of counting. Factorial  $n$ .  $(n!)$  Permutations and combinations, formula for  ${}^n P_r$  and  ${}^n C_r$ , simple applications.

## Unit-III: Coordinate Geometry

### 1. Conic Sections

Sections of a cone: circles, ellipse, parabola, hyperbola. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.

### 2. Introduction to Three-dimensional Geometry

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

## Unit-IV: Calculus

### 1. Derivatives

Derivative introduced as rate of change both as that of distance function and geometrically. Definition of Derivative, relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

## Unit-V: Statistics and Probability

### 1. Probability

Random experiments; outcomes, sample spaces (set representation). Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Probability of an event, probability of 'not', 'and' and 'or' events.

INTERNAL ASSESSMENT	10 MARKS
Periodic Test	5 Marks
Mathematics Activities: Activity file record +Term end assessment of one activity & Viva	5 Marks

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

- Please refer the guidelines given under XII Mathematics Syllabus:

## Subject - Physics (042)

Physics Theory and Practical course will be done in two terms. Each term will be assessed individually.

### Syllabus assigned for Term I (Theory)

#### Course structure

Time: 90 Minutes

Max Marks: 35

		No. of Periods	Marks
Unit-I	Electrostatics	23	17
	Chapter-1: Electric Charges and Fields		
	Chapter-2: Electrostatic Potential and Capacitance		
Unit-II	Current Electricity	15	18
	Chapter-3: Current Electricity		
Unit-III	Magnetic Effects of Current and Magnetism	16	
	Chapter-4: Moving Charges and Magnetism		
	Chapter-5: Magnetism and Matter		
Unit-IV	Electromagnetic Induction and Alternating Currents	19	
	Chapter-6: Electromagnetic Induction		
	Chapter 7: Alternating currents		
Total		73	35

#### Unit I: Electrostatics

23 Periods

##### Chapter-1: Electric Charges and Fields

Electric Charges; Conservation of charge, Coulomb's law-force between two-point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet

##### Chapter-2: Electrostatic Potential and Capacitance

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor.

**Unit II: Current Electricity****15 Periods****Chapter–3: Current Electricity**

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity; temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's laws and simple applications, Wheatstone bridge, metre bridge(**qualitative ideas only**). Potentiometer - principle and its applications to measure potential difference and for comparing EMF of two cells; measurement of internal resistance of a cell (**qualitative ideas only**)

**Unit III: Magnetic Effects of Current and Magnetism****16 Periods****Chapter–4: Moving Charges and Magnetism**

Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire. Straight and toroidal solenoids (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields. Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

**Chapter–5: Magnetism and Matter**

Current loop as a magnetic dipole and its magnetic dipole moment, magnetic dipole moment of a revolving electron, bar magnet as an equivalent solenoid, magnetic field lines; earth's magnetic field and magnetic elements.

**Unit IV: Electromagnetic Induction and Alternating Currents****19 Periods****Chapter–6: Electromagnetic Induction**

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

**Chapter–7: Alternating Current**

Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits. AC generator and transformer.

## Syllabus assigned for Practical for Term I

**Total Periods:16**

First term practical examination will be organised by schools as per the directions of CBSE. The record to be submitted by the students at the time of first term examination has to include a record of at least 4 Experiments and 3 Activities to be demonstrated by teacher.

### Evaluation Scheme

**Time Allowed: one and half hours**

**Max. Marks: 15**

Two experiments to be performed by students at time of examination	<b>8 marks</b>
Practical record [experiments and activities]	<b>2 marks</b>
Viva on experiments, <b>and</b> activities	<b>5 marks</b>
<b>Total</b>	<b>15 marks</b>

### Experiments assigned for Term I

1. To determine resistivity of two / three wires by plotting a graph between potential difference versus current.
2. To find resistance of a given wire / standard resistor using metre bridge.

**OR**

To verify the laws of combination (series) of resistances using a metre bridge.

**OR**

To verify the laws of combination (parallel) of resistances using a metre bridge.

3. To compare the EMF of two given primary cells using potentiometer.

**OR**

To determine the internal resistance of given primary cell using potentiometer.

4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
5. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.

**OR**

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

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

### **Activities assigned for Term I**

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.
5. To study the variation in potential drop with length of a wire for a steady current.
6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

## Syllabus assigned for Term II (Theory)

### Course structure

**Time: 2 Hours**

**Max Marks: 35**

		No of Periods	Marks
Unit–V	Electromagnetic Waves	02	17
	Chapter–8:Electromagnetic Waves		
Unit–VI	Optics	18	
	Chapter–9: Ray Optics and Optical Instruments		
	Chapter–10: Wave Optics		
Unit–VII	Dual Nature of Radiation and Matter	07	11
	Chapter–11: Dual Nature of Radiation and Matter		
Unit–VIII	Atoms and Nuclei	11	
	Chapter–12: Atoms		
	Chapter–13: Nuclei		
Unit–IX	Electronic Devices	07	7
	Chapter–14: Semiconductor -Electronics: Materials, Devices and Simple Circuits		
Total		45	35

**Unit V: Electromagnetic waves**

**2 Periods**

#### **Chapter–8: Electromagnetic Waves**

Electromagnetic waves, their characteristics, their Transverse nature (qualitative ideas only).

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

**Unit VI: Optics**

**18Periods**

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

**Ray Optics:** Refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism.

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

#### **Chapter–10: Wave Optics**

**Wave optics:** Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width, coherent

sources and sustained interference of light, diffraction due to a single slit, width of central maximum

**Unit VII: Dual Nature of Radiation and Matter**

**7 Periods**

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

Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light.

Experimental study of photoelectric effect

Matter waves-wave nature of particles, de-Broglie relation

**Unit VIII: Atoms and Nuclei**

**11Periods**

**Chapter–12: Atoms**

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.

**Chapter–13: Nuclei** Composition and size of nucleus Nuclear force Mass-energy relation, mass defect, nuclear fission, nuclear fusion.

**Unit IX: Electronic Devices**

**7 Periods**

**Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits** Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier; Special purpose p-n junction diodes: LED, photodiode, solar cell.

**Syllabus assigned for Practical for Term II**

**Total Periods: 16**

The second term practical examination will be organised by schools as per the directions of CBSE and viva will be taken by both internal and external observers. The record to be submitted by the students at the time of second term examination has to include a record of at least 4 Experiments and 3 Activities to be demonstrated by teacher.

**Evaluation Scheme**

**Time Allowed: one and half hours**

**Max. Marks: 15**

Two experiments to be performed by students at time of examination	<b>8 marks</b>
Practical record [experiments and activities]	<b>2 marks</b>
Viva on experiments, <b>and</b> activities	<b>5 marks</b>
<b>Total</b>	<b>15 marks</b>

### **Experiments assigned for Term-II**

1. To find the focal length of a convex lens by plotting graphs between  $u$  and  $v$  or between  $1/u$  and  $1/v$ .
2. To find the focal length of a convex mirror, using a convex lens.

OR

To find the focal length of a concave lens, using a convex lens.

3. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
4. To determine refractive index of a glass slab using a travelling microscope.
5. To find refractive index of a liquid by using convex lens and plane mirror.
6. To draw the I-V characteristic curve for a p-n junction diode in forward bias and reverse bias.

### **Activities assigned for Term-II**

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
2. Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.
3. To study effect of intensity of light (by varying distance of the source) on an LDR.
4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
5. To observe polarization of light using two Polaroids.
6. To observe diffraction of light due to a thin slit.
7. To study the nature and size of the image formed by a (i) convex lens, (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.



## Subject - Chemistry (043)

### SYLLABUS FOR SESSION 2021-22 CLASS XI Term-I

S	UNIT	Periods	Marks
1	Some Basic Concepts of Chemistry	10	11
2	Structure of Atom	12	
3	Classification of Elements and Periodicity in Properties	6	4
4	Chemical Bonding and Molecular Structure	14	6
5	Redox Reactions	4	5
6	Hydrogen	4	
7	Organic Chemistry: Some basic Principles and Techniques	10	9
	TOTAL	60	35

**Some Basic Concepts of Chemistry:** General Introduction: Importance and scope of Chemistry. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.

**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

**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.

**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.

**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.

**Hydrogen:** Position of hydrogen in periodic table, occurrence, isotopes, hydrides-ionic covalent and interstitial; physical and chemical properties of water, heavy water, hydrogen as a fuel

**Organic Chemistry: Some basic Principles and Techniques:** General introduction, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.

## PRACTICALS

**Term I: A 15-mark Practical** would be conducted under the supervision of subject teacher. This would contribute to the overall practical marks for the subject.

**OR**

In case the situation of lockdown continues until Nov-Dec 2021, a *Practical Based Assessment (pen-paper)* of 15 marks would be conducted at the end of Term I.

### Term-I Evaluation Scheme

S. No	Practical	Marks
1.	Volumetric Analysis	8
2.	Content Based experiment	2
3.	Class record and viva (Internal Examiner)	5
TOTAL		15

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

#### A. Basic Laboratory Techniques

1. Cutting glass tube and glass rod
2. Bending a glass tube
3. Drawing out a glass jet
4. Boring a cork

#### B. Characterization of Chemical Substances (2 Marks)

1. Determination of melting point of an organic compound.
2. Determination of boiling point of an organic compound.

#### C. Quantitative Estimation (8 marks)

- i. Using a mechanical balance/electronic balance.
- ii. Preparation of standard solution of Oxalic acid.
- iii. Determination of strength of a given solution of Sodium hydroxide by titrating it against standard solution of Oxalic acid.
- iv. Preparation of standard solution of Sodium carbonate.
- v. Determination of strength of a given solution of hydrochloric acid by titrating it against standard Sodium Carbonate solution.

## SYLLABUS FOR SESSION 2021-22 CLASS XI Term-II

S.No	UNIT	Periods	Marks
1	States of Matter: Gases and Liquids	9	15
2	Chemical Thermodynamics	14	
3	Equilibrium	12	
4	s -Block Elements	5	11
5	Some p -Block Elements	9	
6	Hydrocarbons	10	9
	TOTAL	59	35

**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 and deviation from ideal behaviour.

**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, measurement of  $\Delta U$  and  $\Delta H$ , 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.

Third law of thermodynamics (brief introduction).

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

**s -Block Elements:** 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.

**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.

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.

**Hydrocarbons:** Classification of Hydrocarbons Aliphatic Hydrocarbons:

Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions.

Alkenes - Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov'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.

**Aromatic Hydrocarbons:** Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of functional group in monosubstituted benzene. Carcinogenicity and toxicity.

## PRACTICALS

**Term II:** At the end of Term II, a **15-mark Practical** would be conducted under the supervision of subject teacher. This would contribute to the overall practical marks for the subject.

### OR

In case the situation of lockdown continues beyond December 2021, a *Practical Based Assessment (pen-paper)* of 10 marks and Viva 5 marks would be conducted at the end of Term II by the subject teacher. This would contribute to the overall practical marks for the subject.

### TERM-II Evaluation Scheme

S. No	Practical	Marks
1.	Salt Analysis	8
2.	Content Based Experiment	2
3	Project Work and Viva(Internal)	5
TOTAL		15

#### A. Qualitative Analysis(Marks 8)

- a. Determination of one anion and one cation in a given salt

Cations-  $\text{Pb}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{As}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Sr}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{NH}_4^+$

Anions –  $(\text{CO}_3)^{2-}$ ,  $\text{S}^{2-}$ ,  $\text{NO}_2^-$ ,  $\text{SO}_3^{2-}$ ,  $\text{SO}_4^{2-}$ ,  $\text{NO}_3^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$ ,  $\text{PO}_4^{3-}$ ,  $\text{C}_2\text{O}_4^{2-}$ ,  $\text{CH}_3\text{COO}^-$  (Note: Insoluble salts excluded)

- b. Detection of -Nitrogen, Sulphur, Chlorine in organic compounds.

#### B. Crystallization of impure sample of any one of the following: Alum, Copper Sulphate, Benzoic Acid. (Marks 2)

PROJECTS scientific investigations involving laboratory testing and collecting information from other sources.

#### Guidelines on Syllabus for Visually Handicapped students.

Schools are expected to rationalise and divide the syllabus of practicums for visually handicapped students into two halves on the basis of collective guidelines given for the same in the complete syllabus and as per the convenience of their students. This flexibility is given in view of the special

## Subject - Biology (044)

### COURSE STRUCTURE CLASS XI (2021 -22)

EVALUATION SCHEME		
<b>Theory</b>		
Units	Term – I	Marks
<b>I</b>	Diversity of Living Organisms: Chapter - 1, 2, 3 and 4	15
<b>II</b>	Structural Organization in Plants and Animals: Chapter – 5 and 7	08
<b>III</b>	Cell: Structure and Function: Chapter – 8 and 9	12
Units	Term - II	Marks
<b>III</b>	Cell: Structure and Function: Chapter - 10	05
<b>IV</b>	Plant Physiology: Chapter - 13,14 and 15	12
<b>V</b>	Human Physiology: Chapter –17, 18, 19, 20, 21 and 22	18
<b>Total Theory (Term – I and Term – II)</b>		<b>70</b>

<b>Practicals Term – I</b>	<b>15</b>
<b>Practicals Term – II</b>	<b>15</b>
<b>Total</b>	<b>100</b>

## **THEORY**

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### **Term – I**

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#### **Unit-I Diversity of Living Organisms**

##### **Chapter-1: The Living World**

What is living? Biodiversity; Need for classification; three domains of life; concept of species and taxonomical hierarchy; binomial nomenclature.

##### **Chapter-2: Biological Classification**

Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.

##### **Chapter-3: Plant Kingdom**

Salient features and classification of plants into major groups - Algae, Bryophyta, Pteridophyta and Gymnospermae. (salient and distinguishing features and a few examples of each category).

##### **Chapter-4: Animal Kingdom**

Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level (salient features and distinguishing features of a few examples of each category). (No live animals or specimen should be displayed.)

#### **Unit-II Structural Organization in Animals and Plants**

##### **Chapter-5: Morphology of Flowering Plants**

Morphology of inflorescence and flower, Description of 01 family: Solanaceae or Liliaceae (to be dealt along with the relevant experiments of the Practical Syllabus).

##### **Chapter-7: Structural Organization in Animals**

Animal tissues.

#### **Unit-III Cell: Structure and Function**

##### **Chapter-8: Cell-The Unit of Life**

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; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.

##### **Chapter-9: Biomolecules**

Chemical constituents of living cells: biomolecules, structure and function of proteins,

carbohydrates, lipids, nucleic acids; Enzymes- types, properties, enzyme action.

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## **Term – II**

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### **Unit-III Cell: Structure and Function**

#### **Chapter-10: Cell Cycle and Cell Division**

Cell cycle, mitosis, meiosis and their significance

### **Unit-IV Plant Physiology**

#### **Chapter-13: Photosynthesis in Higher Plants**

Photosynthesis as a means 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.

#### **Chapter-14: Respiration in Plants**

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**

Growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.

### **Unit-V Human Physiology**

#### **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.

#### **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, kidney transplant.

### **Chapter-20: Locomotion and Movement**

Skeletal muscle, contractile proteins and muscle contraction.

### **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.

### **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.

**Note:** Diseases related to all the human physiological systems to be taught in brief.

## **PRACTICALS**

**Max. Marks: 15 for each Term**

<b>Evaluation Scheme</b>			
	<b>TERM-I</b>	<b>TERM - II</b>	<b>MARKS</b>
<b>Part A</b>			
One Major Experiment	Experiment No. - 1	Experiment No. -3, 4	<b>4</b>
One Minor Experiment	Experiment No. - 2	Experiment No. - 5, 6, 7	<b>3</b>
<b>Part B</b>			
Spotting (3 Spots of 1 mark each)	B.1, 2, 3	B.4, 5	<b>3</b>
<b>Practical Record + Investigatory Project &amp; Record + Viva Voce</b>			<b>5</b>
<b>Total</b>			<b>15</b>

**Practicals should be conducted alongside the concepts taught in theory classes.**

### **A: List of Experiments**

#### **TERM -I:**

1. Study and describe a locally available common flowering plant, from any one family: Solanaceae or Liliaceae (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).
2. Study of osmosis by Potato osmometer.

#### **TERM -II:**



3. Separation of plant pigments through paper chromatography.
4. Study of distribution of stomata in the upper and lower surfaces of leaves.
5. Study of the rate of respiration in flower buds/leaf tissue and germinating seeds.
6. Test for presence of sugar in urine.
7. Test for presence of albumin in urine.

**B. Study/Observation of the following (spotting):**

**TERM - I:**

- B.1 Parts of a compound microscope.
- B.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.
- B.3 Virtual specimens/slides/models and identifying features of - *Amoeba*, *Hydra*, liverfluke, *Ascaris*, leech, earthworm, prawn, silkworm, honeybee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.

**TERM- II :**

- B.4 Tissues and diversity in shape and size of animal cells (squamous epithelium, smooth, skeletal and cardiac muscle fibers and mammalian blood smear) through temporary/permanent slides.
- B.5 Mitosis in onion root tip cells and animal cells (grasshopper) from permanent slides.

**Practical Examination for Visually Impaired Students Class XI**

**Note:** The 'Evaluation schemes' and 'General Guidelines' for visually impaired students as given for Class XII may be followed.

**Practicals should be conducted alongside the concepts taught in theory classes.**

**A. Items for Identification/Familiarity with the apparatus /equipments/animal and plant material / chemicals etc. for assessment in practicals (All experiments)**

**TERM - I:**

- Plants of Solanaceae - Brinjal, Petunia, any other or Liliaceae- Any of the Lilies.
- **Compound microscope, Test tube, Petridish, Beaker, Scalpel.**

**TERM - II:**

- Mushroom, Succulents such as *Aloe vera*/*Kalanchoe*, Raisins, Potatoes.
- Honey comb, Mollusc shell, Model of cockroach, Pigeon and Star fish.
- Chromatography paper, Chromatography chamber, Alcohol.

**B. List of Practicals:**

**TERM - I:**

1. Study one locally available common flowering plants of the family – Solanaceae or Liliaceae and identify inflorescence/flower.
2. Study the parts of a compound microscope- eye piece and objective lens, mirror, stage, coarse and fine adjustment knobs.

**TERM - II:**

3. Identify the given specimen of a fungus – Mushroom, gymnosperm- pine cone
4. Study honey-bee/butterfly, snail shell, Starfish, Pigeon (through models).

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

**Prescribed Books:**

1. Biology Class-XI, Published by NCERT
2. Other related books and manuals brought out by NCERT (including multimedia)

## Subject - Accountancy (055)

### Course Structure Class-XI (2021-22)

<b>TERM – 1 (MCQ BASED QUESTION PAPER)</b>		
	<b>THEORY :40 MARKS</b>	<b>TIME: 90 minutes</b>
	<b>Part A: FINANCIAL ACCOUNTING-I</b>	
	<b>UNIT 1</b>	
	<b><u>THEORETICAL FRAMEWORK:</u></b>	
1	INTRODUCTION TO ACCOUNTING	12
2	THEORY BASE OF ACCOUNTING	
	<b>UNIT 2</b>	
	<b><u>ACCOUNTING PROCESS:</u></b>	
	RECORDING OF BUSINESS TRANSACTIONS, BANK RECONCILIATION STATEMENT, DEPRECIATION, PROVISIONS AND RESERVES	28
	<b>TOTAL</b>	<b>40</b>
	<b>Project Work (Part -1): 10 Marks</b>	

### PART A: FINANCIAL ACCOUNTING - I

#### Unit-1: Theoretical Framework

Units/Topics	Learning Outcomes
<b>Introduction to Accounting</b> <ul style="list-style-type: none"> <li>Accounting- concept, objectives, advantages and limitations, types of accounting information; users of accounting information and their needs. Qualitative Characteristics of Accounting Information. Role of Accounting in Business.</li> <li>Basic Accounting Terms- Business Transaction, Capital, Drawings. Liabilities (Non Current and Current). Assets (Non Current, Current); Fixed assets (Tangible and Intangible), Expenditure (Capital and Revenue), Expense, Income, Profit, Gain, Loss, Purchase, Sales, Goods, Stock, Debtor, Creditor, Voucher, Discount (Trade discount and Cash Discount)</li> </ul>	<b>After going through this Unit, the students will be able to:</b> <ul style="list-style-type: none"> <li>describe the meaning, significance, objectives, advantages and limitations of accounting in the modern economic environment with varied types of business and non-business economic entities.</li> <li>identify / recognise the individual(s) and entities that use accounting information for serving their needs of decision making.</li> <li>explain the various terms used in accounting and differentiate between different related terms like current and non-current, capital and revenue.</li> <li>give examples of terms like business transaction, liabilities, assets, expenditure and purchases.</li> </ul>

<p><b>Theory Base of Accounting</b></p> <ul style="list-style-type: none"> <li>• Fundamental accounting assumptions: GAAP: Concept</li> <li>• Business Entity, Money Measurement, Going Concern, Accounting Period, Cost Concept, Dual Aspect, Revenue Recognition, Matching, Full Disclosure, Consistency, Conservatism, Materiality and Objectivity</li> <li>• System of Accounting. Basis of Accounting: cash basis and accrual basis</li> <li>• Accounting Standards: Applicability in IndAS</li> <li>• Goods and Services Tax (GST): Characteristics and Objective.</li> </ul>	<ul style="list-style-type: none"> <li>• explain that sales/purchases include both cash and credit sales/purchases relating to the accounting year.</li> <li>• differentiate among income, profits and gains.</li> <li>• state the meaning of fundamental accounting assumptions and their relevance in accounting.</li> <li>• describe the meaning of accounting assumptions and the situation in which an assumption is applied during the accounting process.</li> <li>• explain the meaning and objectives of accounting standards.</li> <li>• appreciate that various accounting standards developed nationally and globally are in practice for bringing parity in the accounting treatment of different items.</li> <li>• acknowledge the fact that recording of accounting transactions follows double entry system.</li> <li>• explain the bases of recording accounting transaction and to appreciate that accrual basis is a better basis for depicting the correct financial position of an enterprise.</li> <li>• Understand the need of IFRS</li> <li>• Explain the meaning, objective and characteristic of GST.</li> </ul>
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## Unit-2: Accounting Process

Units/Topics	Learning Outcomes
<p><b>Recording of Business Transactions</b></p> <ul style="list-style-type: none"> <li>• Voucher and Transactions: Source documents and Vouchers, Preparation of Vouchers, Accounting Equation Approach: Meaning and Analysis, Rules of Debit and Credit.</li> <li>• Recording of Transactions: Books of Original</li> </ul>	<p><b>After going through this Unit, the students will be able to:</b></p> <ul style="list-style-type: none"> <li>• explain the concept of accounting equation and appreciate that every transaction affects either both the sides of the equation or a positive effect on one item and a negative effect on another item on the same side of</li> </ul>

<p>Entry- Journal</p> <ul style="list-style-type: none"> <li>• Special Purpose books:</li> <li>• Cash Book: Simple, cash book with bank column and petty cashbook</li> <li>• Purchases book</li> <li>• Sales book</li> <li>• Purchases return book</li> <li>• Sales return book</li> </ul> <p><b>Note: Including trade discount, freight and cartage expenses for simple GST calculation.</b></p> <ul style="list-style-type: none"> <li>• Ledger: Format, Posting from journal and subsidiary books, Balancing of accounts</li> </ul> <p><b>Bank Reconciliation Statement:</b></p> <ul style="list-style-type: none"> <li>• Need and preparation.</li> </ul> <p><b>Depreciation, Provisions and Reserves</b></p> <ul style="list-style-type: none"> <li>• Depreciation: Concept, Features, Causes, factors</li> <li>• Other similar terms: Depletion and Amortisation</li> <li>• Methods of Depreciation: <ul style="list-style-type: none"> <li>i. Straight Line Method (SLM)</li> <li>ii. Written Down Value Method (WDV)</li> </ul> </li> </ul> <p><b>Note: Excluding change of method</b></p> <ul style="list-style-type: none"> <li>• Difference between SLM and WDV; Advantages of SLM and WDV</li> <li>• Accounting treatment of depreciation <ul style="list-style-type: none"> <li>i. Charging to asset account</li> <li>ii. Creating provision for depreciation/accumulated depreciation account</li> </ul> </li> <li>• Provisions and Reserves: Difference</li> <li>• Types of Reserves: <ul style="list-style-type: none"> <li>i. Revenue reserve</li> <li>ii. Capital reserve</li> <li>iii. General reserve</li> <li>iv. Specific reserve</li> </ul> </li> </ul>	<p>accounting equation.</p> <ul style="list-style-type: none"> <li>• explain the effect of a transaction (increase or decrease) on the assets, liabilities, capital, revenue and expenses.</li> <li>• appreciate that on the basis of source documents, accounting vouchers are prepared for recording transaction in the books of accounts.</li> <li>• develop the understanding of recording of transactions in journal and the skill of calculating GST.</li> <li>• explain the purpose of maintaining a Cash Book and develop the skill of preparing the format of different types of cash books and the method of recording cash transactions in Cash book.</li> <li>• describe the method of recording transactions other than cash transactions as per their nature in different subsidiary books .</li> <li>• appreciate that at times bank balance as indicated by cash book is different from the bank balance as shown by the pass book / bank statement and to reconcile both the balances, bank reconciliation statement is prepared.</li> <li>• develop understanding of preparing bank reconciliation statement.</li> <li>• appreciate that for ascertaining the position of individual accounts, transactions are posted from subsidiary books and journal proper into the concerned accounts in the ledger and develop the skill of ledger posting.</li> <li>• explain the necessity of providing depreciation and develop the skill of using different methods for computing depreciation.</li> <li>• understand the accounting treatment of providing depreciation directly to the concerned asset account or by creating provision for depreciation account.</li> </ul>
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v. Secret Reserve <ul style="list-style-type: none"> <li>Difference between capital and revenue reserve</li> </ul>	<ul style="list-style-type: none"> <li>appreciate the need for creating reserves and also making provisions for events which may belong to the current year but may happen in next year.</li> <li>appreciate the difference between reserve and reserve fund.</li> </ul>
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	<b><u>TERM II</u></b>	<b>MARKS</b>
	<b><u>Theory: 40 Marks</u></b>	
	<b>Part A</b>	
	<b><u>UNIT 2</u></b>	
	<b><u>ACCOUNTING PROCESS:</u></b>	
1	ACCOUNTING FOR BILLS OF EXCHANGE	12
2	TRIAL BALANCE AND RECTIFICATION OF ERRORS	
	<b>Part B: FINANCIAL ACCOUNTING-II</b>	
	<b><u>UNIT 3</u></b>	
	FINANCIAL STATEMENTS OF SOLE PROPRIETORSHIP FROM COMPLETE AND INCOMPLETE RECORDS	20
	<b><u>UNIT 4</u></b>	
	COMPUTERS IN ACCOUNTING	8
	<b>TOTAL</b>	<b>40</b>
	<b>PROJECT (PART – 2): 10 MARKS</b>	

<p><b>Accounting for Bills of Exchange</b></p> <ul style="list-style-type: none"> <li>• Bill of exchange and Promissory Note: Definition, Specimen, Features, Parties.</li> <li>• Difference between Bill of Exchange and Promissory Note</li> <li>• Terms in Bill of Exchange: <ul style="list-style-type: none"> <li>i. Term of Bill</li> <li>ii. Accommodation bill (concept)</li> <li>iii. Days of Grace</li> <li>iv. Date of maturity</li> <li>v. Discounting of bill</li> <li>vi. Endorsement of bill</li> <li>vii. Bill after due date</li> <li>viii. Negotiation</li> <li>ix. Bill sent for collection</li> <li>x. Dishonour of bill</li> </ul> </li> <li>• Accounting Treatment</li> </ul> <p><b>Note: excluding accounting treatment for accommodation bill</b></p> <p><b>Trial balance and Rectification of Errors</b></p> <ul style="list-style-type: none"> <li>• Trial balance: objectives and preparation</li> </ul> <p><b>(Scope: Trial balance with balance method only)</b></p> <ul style="list-style-type: none"> <li>• Errors: types-errors of omission, commission, principles, and compensating; their effect on Trial Balance.</li> <li>• Detection and rectification of errors; preparation of suspense account.</li> </ul>	<ul style="list-style-type: none"> <li>• acquire the knowledge of using bills of exchange and promissory notes for financing business transactions.</li> <li>• understand the meaning and distinctive features of these instruments and develop the skills of their preparation.</li> <li>• state the meaning of different terms used in bills of exchange and their implication in accounting.</li> <li>• explain the method of recording of bill transactions.</li> <li>• state the need and objectives of preparing trial balance and develop the skill of preparing trial balance.</li> <li>• appreciate that errors may be committed during the process of accounting.</li> <li>• understand the meaning of different types of errors and their effect on trial balance.</li> <li>• develop the skill of identification and location of errors and their rectification and preparation of suspense account.</li> </ul>
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## Part B: Financial Accounting - II

### Unit 3: Financial Statements of Sole Proprietorship

Units/Topics	Learning Outcomes
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<p><b>Financial Statements</b></p> <p>Meaning, objectives and importance; Revenue and Capital Receipts; Revenue and Capital Expenditure; Deferred Revenue expenditure.</p> <p>Trading and Profit and Loss Account: Gross Profit, Operating profit and Net profit. Preparation.</p> <p>Balance Sheet: need, grouping and marshalling of assets and liabilities. Preparation.</p> <p>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, Abnormal loss, goods taken for personal use/staff welfare, interest on capital and managers commission.</p> <p>Preparation of Trading and Profit and Loss account and Balance Sheet of a sole proprietorship with adjustments.</p> <p><b>Incomplete Records</b></p> <p>Features, reasons and limitations.</p> <p>Ascertainment of Profit/Loss by Statement of Affairs method.</p>	<p><b>After going through this Unit, the students will be able to:</b></p> <ul style="list-style-type: none"> <li>• state the meaning of financial statements the purpose of preparing financial statements.</li> <li>• state the meaning of gross profit, operating profit and net profit and develop the skill of preparing trading and profit and loss account.</li> <li>• explain the need for preparing balance sheet.</li> <li>• understand the technique of grouping and marshalling of assets and liabilities.</li> <li>• appreciate that there may be certain items other than those shown in trial balance which may need adjustments while preparing financial statements.</li> <li>• develop the understanding and skill to do adjustments for items and their presentation in financial statements like depreciation, closing stock, provisions, abnormal loss etc.</li> <li>• develop the skill of preparation of trading and profit and loss account and balance sheet.</li> <li>• state the meaning of incomplete records and their uses and limitations.</li> <li>• develop the understanding and skill of computation of profit / loss using the statement of affairs method.</li> </ul>
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#### Unit 4: Computers in Accounting

Units/Topics	Learning Outcomes
<ul style="list-style-type: none"> <li>• Introduction to computer and accounting information system (AIS): Introduction to computers (elements, capabilities, limitations of computer system)</li> </ul>	<p><b>After going through this Unit, the students will be able to:</b></p> <ul style="list-style-type: none"> <li>• state the meaning of a computer, describe its components, capabilities and limitations.</li> <li>• state the meaning of accounting information system.</li> </ul>



**Scope:**

*(i) The scope of the unit is to understand accounting as an information system for the generation of accounting information and preparation of accounting reports.*

*(ii) It is presumed that the working knowledge of any appropriate accounting software will be given to the students to help them learn basic accounting operations on computers.*

- appreciate the need for use of computers in accounting for preparing accounting reports.
- develop the understanding of comparing the manual and computerized accounting process and appreciate the advantages and limitations of automation.
- understand the different kinds of accounting software.

## Subject - Economics (030)

### CLASS XI - TERM-WISE CURRICULUM

Units	TERM 1 - MCQ BASED QUESTION PAPER	Marks
	Theory: 40 Marks Time: 90 minutes	
<b>Part A</b>	<b>Statistics for Economics</b>	
	Introduction	4
	Collection, Organisation and Presentation of Data	9
	Statistical Tools and Interpretation – Arithmetic Mean, Median and Mode	10
	<b>Sub Total</b>	<b>23</b>
<b>Part B</b>	<b>Introductory Microeconomics</b>	
	Introduction	4
	Consumer's Equilibrium and Demand	13
	<b>Sub Total</b>	<b>17</b>
	<b>Total</b>	<b>40 marks</b>
<b>Part C</b>	<b>Project Work (Part 1): 10 Marks</b>	

Students would prepare only ONE project in the entire academic session, which is divided into 2 terms i.e. Term I and Term II.

### TERM 1

#### Part A: Statistics for Economics

##### Unit 1: Introduction

What is Economics?

Meaning, scope, functions and importance of statistics in Economics

##### Unit 2: Collection, Organisation and Presentation of data

**Collection of data** - sources of data - primary and secondary; how basic data is collected with concepts of Sampling; methods of collecting data; some important sources of secondary data: Census of India and National Sample Survey Organisation.

**Organisation of Data:** Meaning and types of variables; Frequency Distribution.

**Presentation of Data:** Tabular Presentation and 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).

##### Unit 3: Statistical Tools and Interpretation

**Measures of Central Tendency-** Arithmetic mean, median and mode

## Part B: Introductory Microeconomics

### Unit 4: 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; opportunity cost.

### Unit 5: Consumer's Equilibrium and Demand

Consumer's equilibrium - meaning of utility, marginal utility, law of diminishing marginal utility, 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 and its slope, 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.

## Part C: Project in Economics - Guidelines as given in class XII curriculum

Units	TERM 2 - SUBJECTIVE QUESTION PAPER	Marks
	Theory: 40 Marks Time: 2 Hours	
<b>Part A</b>	<b>Statistics for Economics</b>	
	Statistical Tools and Interpretation – Measures of Dispersion, Correlation, Index Number	17
	<b>Sub</b>	<b>17</b>
	<b>Total</b>	
<b>Part B</b>	<b>Introductory Microeconomics</b>	
	Producer Behaviour and Supply	13
	Forms of Market and Price Determination under perfect competition with simple applications	10
	<b>Sub Total</b>	<b>23</b>
	<b>Total</b>	<b>40 marks</b>
<b>Part C</b>	<b>Project Work (Part 2): 10 Marks</b>	

## **Part A: Statistics for Economics**

### **Unit 3: Statistical Tools and Interpretation**

**Measures of Dispersion** - absolute dispersion (standard deviation); relative dispersion (co-efficient of variation)

**Correlation** – meaning and properties, scatter diagram; Measures of correlation - Karl Pearson's method (two variables ungrouped data)

**Introduction to Index Numbers** - meaning, types - wholesale price index, consumer price index, uses of index numbers; Inflation and index numbers.

## **Part B: Introductory Microeconomics**

### **Unit 6: Producer Behaviour and Supply**

Meaning of Production Function – Short-Run and Long-Run Total Product, Average Product and Marginal Product.

Returns to a Factor

Cost: Short run costs - total cost, total fixed cost, total variable cost; Average cost; Average fixed cost, average variable cost and marginal cost-meaning and their relationships.

Revenue - total, average and marginal revenue - meaning and their relationship.

Supply, market supply, determinants of supply, supply schedule, supply curve and its slope, movements along and shifts in supply curve, price elasticity of supply; measurement of price elasticity of supply - percentage-change method.

### **Unit 7: Forms of Market and Price Determination under Perfect Competition with simple applications.**

Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply.

Simple Applications of Demand and Supply: Price ceiling, price floor.

## Subject - Business Studies (054)

### CLASS–XI (2021-22) TERM WISE CURRICULUM

	<b>TERM 1-MCQ BASED QUESTION PAPER</b> <b>THEORY - 40 MARKS                      DURATION: 90 MINUTES</b>		
<b>Units</b>		<b>Periods</b>	<b>Marks</b>
<b>Part A</b>	<b>Foundations of Business</b>		
1	Evolution and Fundamentals of Business	18	16
2	Forms of Business Organisations	20	
3	Public, Private and Global Enterprises	10	14
4	Business Services	14	
5	Emerging Modes of Business	05	10
6	Social Responsibility of Business and Business Ethics	08	
	<b>Total</b>	<b>75</b>	<b>40</b>
	<b>PROJECT WORK ( Part-1)</b>		<b>10</b>

#### TERM I

##### Part A: Foundation of Business

Concept includes meaning and features

##### Unit 1: Evolution and Fundamentals of Business

<b>Content</b>	<b>After going through this unit, the student/ learner would be able to:</b>
History of Trade and Commerce in India: Indigenous Banking System, Rise of Intermediaries, Transport, Trading Communities: Merchant Corporations, Major Trade Centers, Major Imports and Exports, Position of Indian Sub-Continent in the World Economy.	<ul style="list-style-type: none"> <li>To acquaint the History of Trade and Commerce in India</li> </ul>
Business – meaning and characteristics	<ul style="list-style-type: none"> <li>Understand the meaning of business with special reference to economic and non-</li> </ul>

	<p>economic activities.</p> <ul style="list-style-type: none"> <li>● Discuss the characteristics of business.</li> </ul>
Business, profession and employment-Concept	<ul style="list-style-type: none"> <li>● Understand the concept of business, profession and employment.</li> <li>● Differentiate between business, profession and employment.</li> </ul>
Objectives of business	<ul style="list-style-type: none"> <li>● Appreciate the economic and social objectives of business.</li> <li>● Examine the role of profit in business.</li> </ul>
Classification of business activities - Industry and Commerce	<ul style="list-style-type: none"> <li>● Understand the broad categories of business activities- industry and commerce.</li> </ul>
Industry-types: primary, secondary, tertiary Meaning and subgroups	<ul style="list-style-type: none"> <li>● Describe the various types of industries.</li> </ul>
Commerce-trade: (types-internal, external; wholesale and retail) and auxiliaries to trade; (banking, insurance, transportation, warehousing, communication, and advertising) – meaning	<ul style="list-style-type: none"> <li>● Discuss the meaning of commerce, trade and auxiliaries to trade.</li> <li>● Discuss the meaning of different types of trade and auxiliaries to trade.</li> <li>● Examine the role of commerce- trade and auxiliaries to trade.</li> </ul>
Business risk-Concept	<ul style="list-style-type: none"> <li>● Understand the concept of risk as a special characteristic of business.</li> <li>● Examine the nature and causes of business risks.</li> </ul>

## Unit 2: Forms of Business organizations

Sole Proprietorship-Concept, merits and limitations.	<ul style="list-style-type: none"> <li>● List the different forms of business organizations and understand their meaning.</li> <li>● Identify and explain the concept, merits and limitations of Sole Proprietorship.</li> </ul>
Partnership-Concept, types, merits and limitation of partnership, registration of a partnership firm, partnership deed. Types of partners	<ul style="list-style-type: none"> <li>● Identify and explain the concept, merits and limitations of a Partnership firm.</li> <li>● Understand the types of partnership on the basis of duration and on the basis of liability.</li> <li>● State the need for registration of a partnership firm.</li> <li>● Discuss types of partners –active, sleeping, secret, nominal and partner by estoppel.</li> </ul>
Hindu Undivided Family Business: Concept	<ul style="list-style-type: none"> <li>● Understand the concept of Hindu Undivided Family Business.</li> </ul>
Cooperative Societies-Concept, types, merits, and limitations.	<ul style="list-style-type: none"> <li>● Identify and explain the concept, merits and limitations of Cooperative Societies.</li> <li>● Understand the concept of consumers, producers, marketing, farmers, credit and housing co-operatives.</li> </ul>
Company - Concept, merits and limitations; Types: Private, Public and One Person Company – Concept	<ul style="list-style-type: none"> <li>● Identify and explain the concept, merits and limitations.</li> <li>● Understand the concept of private and public companies and one person company.</li> <li>● Understand the meaning of one person company.</li> </ul>

	<ul style="list-style-type: none"> <li>• Distinguish between a private company and a public company.</li> </ul>
Formation of company - stages, important documents to be used in the formation of a company	<ul style="list-style-type: none"> <li>• Highlight the stages in the formation of a company.</li> <li>• Discuss the important documents used in the various stages in the formation of a company.</li> </ul>

### Unit 3: Public, Private and Global Enterprises

Public sector and private sector enterprises – Concept	<ul style="list-style-type: none"> <li>• Develop an understanding of Public sector and private sector enterprises</li> </ul>
Forms of public sector enterprises: Departmental Undertakings, Statutory Corporations and Government Company.	<ul style="list-style-type: none"> <li>• Identify and explain the features, merits and limitations of different forms of public sector enterprises</li> </ul>

### Unit 4: Business Services

Business services – meaning and types. Banking: Types of bank accounts - savings, current, recurring, fixed deposit and multiple option deposit account	<ul style="list-style-type: none"> <li>• Understand the meaning and types of business services.</li> <li>• Develop an understanding of different types of bank accounts.</li> </ul>
Banking services with particular reference to Bank Draft, Bank Overdraft, Cash credit. E-Banking meaning, Types of digital payments	<ul style="list-style-type: none"> <li>• Develop an understanding of the different services provided by banks</li> </ul>
Insurance – Principles. Types – life, health, fire and marine insurance– concept	<ul style="list-style-type: none"> <li>• Understand Utmost Good Faith, Insurable Interest, Indemnity, Contribution, Doctrine of Subrogation and CausaProxima as principles of insurance</li> <li>• Discuss different types of insurance-life, health, fire, marineinsurance</li> </ul>

### Unit 5: Emerging Modes of Business

E - business: concept, scope and benefits	<ul style="list-style-type: none"> <li>• Give the meaning of e-business.</li> <li>• Discuss the scope of e-business.</li> <li>• Appreciate the benefits of e-business</li> <li>• Distinguish e-business from traditional business.</li> </ul>
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### Unit 6: Social Responsibility of Business and Business Ethics

Concept of social responsibility	<ul style="list-style-type: none"> <li>• State the concept of social responsibility.</li> </ul>
Case for social responsibility	<ul style="list-style-type: none"> <li>• Examine the case for social responsibility.</li> </ul>
Responsibility towards owners, investors, consumers, employees, government and community.	<ul style="list-style-type: none"> <li>• Identify social responsibilities towards different interest groups.</li> </ul>
Role of business in environment protection	<ul style="list-style-type: none"> <li>• Appreciate the role of business in environment protection.</li> </ul>

**PROJECT WORK IN BUSINESS STUDIES (ONLY ONE PROJECT): GUIDELINES AS GIVEN IN CLASS XII CURRICULUM**

	<b>TERM - 2</b>	<b>SUBJECTIVE QUESTION PAPER</b>		
	<b>Theory - 40 Marks</b>	<b>DURATION:- 2 Hrs</b>		
<b>Part B</b>	<b>Finance and Trade</b>	<b>PERIODS</b>	<b>MARKS</b>	
7	Sources of Business Finance	28	20	
8	Small Business and Entrepreneurship Development	16		
9	Internal Trade	22	20	
10	International Business	04		
	<b>TOTAL</b>	<b>70</b>	<b>40</b>	
	<b>PROJECT WORK (PART - 2)</b>		<b>10</b>	

## TERM II

### Part B: Finance and Trade

#### Unit 7: Sources of Business Finance

Business finance: Concept and Importance	<ul style="list-style-type: none"> <li>State the meaning, nature and importance of business finance.</li> </ul>
Owners' funds- equity shares, preferences share, retained earnings, Global Depository receipt (GDR), American Depository Receipt (ADR) and International Depository Receipt (IDR) – concept	<ul style="list-style-type: none"> <li>Classify the various sources of funds into owners' funds.</li> <li>State the meaning of owners' funds.</li> <li>Understand the meaning of Global Depository receipts, American Depository Receipts and International Depository Receipts.</li> </ul>
Borrowed funds: debentures and bonds, loan from financial institution and commercial banks, public deposits, trade credit and	<ul style="list-style-type: none"> <li>State the meaning of borrowed funds.</li> <li>Discuss the concept of debentures, bonds, loans from financial institutions and commercial banks, Trade credit</li> <li>Distinguish between owners' funds and borrowed funds.</li> </ul>

#### Unit 8: Small Business and Entrepreneurship Development

Entrepreneurship Development (ED): Concept and Need. Process of Entrepreneurship Development: Start-up India Scheme, ways to fund startup. Intellectual Property Rights and Entrepreneurship	<ul style="list-style-type: none"> <li>Understand the concept and need of Entrepreneurship Development (ED), Intellectual Property Rights</li> <li>Understand the process of Entrepreneurship Development</li> </ul>
Small scale enterprise – Definition	<ul style="list-style-type: none"> <li>Understand the definition of small enterprises</li> </ul>
Role of small business in India with special reference to rural areas	<ul style="list-style-type: none"> <li>Discuss the role of small scale business in India with special reference to rural areas</li> </ul>
Government schemes and agencies for small scale industries: National Small Industries Corporation (NSIC) and District Industrial Centre (DIC) with special reference to rural, backward areas	<ul style="list-style-type: none"> <li>Appreciate various schemes of NSIC and DIC with special reference to rural, backward area.</li> </ul>



**Unit 9: Internal Trade**

Internal trade - meaning and types of services rendered by a wholesaler and a retailer	<ul style="list-style-type: none"><li>• State the meaning and types of internal trade.</li><li>• Appreciate the services of wholesalers and retailers.</li></ul>
Large scale retailers-Departmental stores, chain stores – concept	<ul style="list-style-type: none"><li>• Highlight the distinctive features of departmental stores, chain stores</li></ul>

**Unit 10: International Trade**

International trade: concept and benefits	<ul style="list-style-type: none"><li>• Understand the concept of international trade.</li><li>• Describe the benefit of international trade to the nation and business firms.</li></ul>
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**PROJECT WORK IN BUSINESS STUDIES (ONLY ONE PROJECT): GUIDELINES AS GIVEN IN CLASS XII CURRICULUM**

## Subject - Geography (029)

### Class XI (2021-22)

### Term wise Syllabus

#### COURSE CONTENT TERM I

**MARKS: 35**  
**Weightage (In Marks)**

<b>Part A:</b>	<b>Fundamentals of Physical Geography</b>	<b>15 Marks</b>
<b>Unit I:</b>	<b>Geography as a Discipline</b> <ul style="list-style-type: none"> <li>□ Geography as an integrating discipline, as a science of spatial attributes. Branches of Geography: Physical Geography and Human Geography. Scope and Career Options (Non-evaluative)</li> </ul>	<b>3</b>
<b>Unit II:</b>	<b>The Earth</b> <ul style="list-style-type: none"> <li>□ Origin and evolution of the earth; interior of the earth</li> <li>□ Wegener's continental drift theory and plate tectonics</li> <li>□ Earthquakes and volcanoes: causes, types and effects</li> </ul>	<b>9</b>
<b>Unit III:</b>	<b>Landforms</b> <ul style="list-style-type: none"> <li>□ Rocks: major types of rocks and their characteristics</li> </ul>	<b>3</b>
<b>Part B:</b>	<b>India - Physical Environment</b>	<b>15 Marks</b>
<b>Unit I:</b>	<b>Introduction</b> <ul style="list-style-type: none"> <li>□ Location, space relations, India's place in the world</li> </ul>	<b>7</b>
<b>Unit II:</b>	<b>Physiography</b> <ul style="list-style-type: none"> <li>□ Drainage systems: Concept of river basins, watershed; the Himalayan and the Peninsular rivers</li> </ul>	<b>8</b>
<b>Map work on identification / interpolation of features based on the units on the outline Physical/Political map of the world/ India</b>		<b>5</b>
<b>Part C:</b>	<b>Practical Work</b>	<b>15 Marks</b>
	CH1: Introduction to Maps	
	CH2: Map Scale	
	CH3: Latitudes, Longitudes and Time	

## COURSE CONTENT TERM II

**MARKS : 35**

**Weightage (In Marks)**

<b>Part A:</b>	<b>Fundamentals of Physical Geography</b>	<b>15 Marks</b>
<b>Unit IV:</b>	<b>Climate</b> <ul style="list-style-type: none"> <li>□ Atmosphere- composition and structure; elements of weather and climate</li> <li>□ Insolation-angle of incidence and distribution; heat budget of the earth-heating and cooling of atmosphere (conduction, convection, terrestrial radiation and advection); temperature - factors controlling temperature; distribution of temperature - horizontal and vertical; inversion of temperature</li> <li>□ Pressure-pressure belts; winds-planetary, seasonal and local; air masses and fronts; tropical and extra-tropical cyclones</li> <li>□ Precipitation-evaporation; condensation-dew, frost, fog, mist and cloud; rainfall-types and world distribution</li> </ul>	<b>8</b>
<b>Unit V:</b>	<b>Water (Oceans)</b> <ul style="list-style-type: none"> <li>□ Movements of ocean water-waves, tides and currents; submarine reliefs</li> <li>□ Ocean resources and pollution</li> </ul>	<b>4</b>
<b>Unit VI:</b>	<b>Life on the Earth</b> <ul style="list-style-type: none"> <li>□ Biosphere - importance of plants and other organisms; biodiversity and conservation.</li> </ul>	<b>3</b>
<b>Part B:</b>	<b>India - Physical Environment</b>	<b>15 Marks</b>
<b>Unit III:</b>	<b>Climate, Vegetation and Soil</b> <ul style="list-style-type: none"> <li>• Weather and climate - spatial and temporal distribution of temperature, pressure winds and rainfall, Indian monsoon: mechanism, onset and withdrawal, variability of rainfalls: spatial and temporal; use of weather charts</li> <li>• Natural vegetation-forest types and distribution; wild life; conservation; biosphere reserves</li> <li>• Soils - major types (ICAR's classification) and their distribution, soil degradation and conservation</li> </ul>	<b>15</b>
<b>Map work on identification/ interpolation of features based on the units on the outline Physical/Political map of the world/ India</b>		<b>5</b>

<b>Part C:</b>	<b>Practical Work</b>	<b>15 Marks</b>
	CH6: Introduction to Aerial Photograph	
	CH7: Introduction to Remote Sensing.	
	CH8: Weather Instruments, Maps and Charts	

**Prescribed Books:**

1. Fundamentals of Physical Geography, Class XI, Published by NCERT
2. India, Physical Environment, Class XI, Published by NCERT
3. Practical Work in Geography, Class XI, Published by NCERT

**Note:** The above textbooks are also available in Hindi medium.

## Subject - Political Science (028)

### Class XI (2021-22) TERM WISE SYLLABUS

#### TERM- 1

40 Marks

Units	Contents	WEIGHTAGE (IN MARKS)
<b>Part A: Indian Constitution at Work</b>		
1	Constitution	12
2	Election and Representation	05
3	Local Government	03
<b>Part B: Political Theory</b>		
4	Political Theory: An Introduction	07
5	Rights	07
6	Development	06
<b>Total</b>		<b>40</b>

#### TERM- 2

40 Marks

Units	Contents	WEIGHTAGE (IN MARKS)
<b>Part A: Indian Constitution at Work</b>		
7	Legislature	07
8	Executive	07
9	Judiciary	06
<b>Part B: Political Theory</b>		
10	Liberty	07
11	Equality	07
12	Justice	06
<b>Total</b>		<b>40</b>

**Project Work\* = 20 Marks**

**\*See the guidelines given with the document.**

Grand Total =	Term I	=	40 Marks
	Term II	=	40 Marks
	Project Work	=	20 Marks
			-----
		=	<b>100 Marks</b>
			-----

**HISTORY**  
**Code No. 027**  
**Class XI (2021-22)**  
**THEMES IN WORLD HISTORY**

**TERM I**

S.NO	THEMES	WEIGHTAGE (IN MARKS)
1.	Theme 2 -Writing And City Life	10
2.	Theme 3 - An Empire Across Three Continents	10
3.	Theme 4 - Central Islamic lands	10
4.	Theme 6 -The Three Orders	10
	<b>Total</b>	<b>40</b>

**TERM-II**

S.NO	THEMES	WEIGHTAGE (IN MARKS)
5.	Theme 7 - Changing Cultural Traditions	10
6.	Theme 9 - The Industrial Revolution	10
7.	Theme 10 - Displacing Indigenous People	10
8.	Theme 11 - Paths To Modernization	10
	<b>Total</b>	<b>40</b>

\* Map work included in both the terms

**Project Work\* = 20 Marks (10+10)**

**\*See the guidelines given with the document.**

Grand Total =	Term I	=	40 Marks
	Term II	=	40 Marks
	Project Work	=	20 Marks
			-----
		=	<b>100 Marks</b>
			-----

**Computer Science**  
**CLASS - XI**  
**Code No. 083**  
**2021-22**

## 1. Learning Outcomes

Student should be able to

- a) develop basic computational thinking
- b) explain and use data types
- c) appreciate the notion of algorithm
- d) develop a basic understanding of computer systems - architecture, operating system and cloud computing
- e) explain cyber ethics, cyber safety and cybercrime
- f) Understand the value of technology in societies along with consideration of gender and disability issues

## 2. Distribution of Marks

Unit No.	Unit Name	Marks	Periods	
			Theory	Practical
I	Computer Systems and Organisation	10	10	5
II	Computational Thinking and Programming - 1	45	50	35
III	Society, Law and Ethics	15	20	----
	Total	70	80	40

		Term-1	Term-2
		Marks	Marks
I	Computer Systems and Organisation	10	---
II	Computational Thinking and Programming - 1	25	20
III	Society, Law and Ethics	---	15
		35	35

### 3. Unit wise Syllabus

#### TERM 1:

#### **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 & interpreter), application software
- Operating system (OS): functions of operating system, OS user interface
- Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's laws and logic circuits
- Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems.
- Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32)

#### **Unit II: Computational Thinking and Programming – 1**

- Introduction to problem solving: Steps for problem solving (analysing the problem, developing an algorithm, coding, testing and debugging). representation of algorithms using flow chart and pseudo code, 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
- 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 & 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
- Iterative statements: for loop, range function, while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number etc
- Strings: introduction, indexing, string operations (concatenation, repetition, membership & slicing), traversing a string using loops, built-in functions: len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(),rstrip(), strip(), replace(), join(), partition(), split()



## **TERM 2:**

### **Unit II: Computational Thinking and Programming – 1**

- Lists: introduction, indexing, list operations (concatenation, repetition, membership & slicing), traversing a list using loops, built-in functions: len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists, suggested programs: finding the maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list
- Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership & slicing), built-in functions: 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 dictionary (adding a new item, modifying an existing item), traversing a dictionary, built-in functions: len(), dict(), keys(), values(), items(), get(), update(), del(), clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), count(), sorted(), copy(); 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
- Introduction to Python modules: Importing module using 'import <module>' and using from statement, Importing math module (pi, e, 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 Right (copyright, patent, trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement), open source softwares and licensing (Creative Commons, GPL and Apache)
- Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime
- Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying.
- Safely accessing web sites: malware, viruses, Trojans, adware
- E-waste management: proper disposal of used electronic gadgets
- Indian Information Technology Act (IT Act)
- Technology & Society: Gender and disability issues while teaching and using computers

## 4. Practical

S.No.		Marks (Total=30)	Term-1 (15 Marks)	Term-2 (15 Marks)
1.	Python program	12	6	6
2.	Report file: Minimum 20 Python programs Term- 1 : Minimum 10 programs based on Term – 1 syllabus Term- 2 : Minimum 10 programs based on Term – 2 syllabus	7	4	3
	Viva voce	3	2	1
3.	Project + Viva voce Term – 1 : Synopsis of the project to be submitted by the students (documentation only)  Term - 2 : Final coding + Viva voce (Student will be allowed to modify their Term 1 document and submit the final executable code.)	8	3	5

## 5. Suggested Practical List

### Term - 1

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.
- Generate the following patterns using nested loop.

Pattern-1	Pattern-2	Pattern-3
*	1 2 3 4 5	A
**	1 2 3 4	AB
***	1 2 3	ABC
****	1 2	ABCD
*****	1	ABCDE

- Write a program to input the value of x and n and print the sum of the following series:
  - $1 + x + x^2 + x^3 + x^4 + \dots + x^n$
  - $1 - x + x^2 - x^3 + x^4 - \dots + x^n$
  - $x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \dots + \frac{x^n}{n}$
  - $x + \frac{x^2}{2!} - \frac{x^3}{3!} + \frac{x^4}{4!} - \dots + \frac{x^n}{n!}$
- 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.

## **Term - 2**

- 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/tuple of elements, search for a given element in the list/tuple.
- Input a list of numbers and find the smallest and largest number from the list.
- Create a dictionary with the roll number, name and marks of n students in a class and display the names of students who have scored marks above 75.

## **6. Suggested Reading Material**

- NCERT Textbook for COMPUTER SCIENCE (Class XI)
- Support Materials on the CBSE website.

## Subject - Painting (049)

CLASS-XI (THEORY) (2021-22)  
(Code No. 049)

Theory: Term-I 15 Marks, and Term-II 15 Marks

Total: 30 Marks

### Unit wise Weightage

Term	Units		Periods	Marks
		<b>History of Indian Art</b>		
<b>I</b>	1	Pre-Historic rock paintings and art of Indus Valley	18	8
	2	Buddhist, Jain and Hindu Art	18	7
<b>II</b>	3	Temple Sculptures	18	8
	4	Bronzes and Artistic aspects of Indo-Islamic architecture	18	7
			<b>72</b>	<b>30</b>

### Term-I

Unit	Content	18 Periods
1.	A. Pre-Historic Rock-Paintings Introduction 1) Period and Location 2) Study and appreciation of following Pre-historic paintings: i. Wizard's Dance, Bhimbethaka	
	B. Introduction 1) Period and Location. 2) Extension: In about 1500 miles. i. Harappa & Mohenjo-daro (Now in Pakistan) ii. Ropar, Lothal, Rangpur, Alamgirpur, Kali Bangan, Banawali and Dholavira (in India)	
2	Study and appreciation of following: Sculptures and Terra cottas: i. Dancing girl (Mohenjo-daro) Bronze, 10.5 x 5 x 2.5 cm. Circa 2500 B.C. (Collection: National Museum, New Delhi). ii. Male Torso(Harappa) Red lime Stone, 9.2 x 5.8 x 3 cms. Circa 2500 B.C. (Collection: National Museum, New Delhi) iii. Mother Goddess (Mohenjo-daro) terracotta, 22 x 8 x 5 c Circa 2500 B.C. (Collection: National Museum, New Delhi).	
3	<b>Study and Appreciation of following Seal:</b>	

	i. Bull (Mohenjo-daro) Stone (Steatite), 2.5 x 2.5 x 1.4 cm. Circa 2500 B.C. (Collection: National Museum, New Delhi). Decoration on earthen wares: Painted earthen-ware (Jar) Mohenjo-daro (Collection: National Museum, New Delhi).	
<b>Unit 2</b>	<b>Buddhist, Jain and Hindu Art (3rd century B.C. to 8th century A.D.)</b>	<b>18 Periods</b>
1.	General Introduction to Art during Mauryan, Shunga, Kushana (Gandhara and Mathura styles) and Gupta period:	
2.	Study and appreciation of following Sculptures:	
	i. Lion Capital from Sarnath (Mauryan period) Polished sandstone, Circa 3rd Century B.C. (Collection: Sarnath Museum, U.P.)	
	ii. Chauri Bearer from Didar Ganj (Yakshi) (Mauryan period) Polished sandstone Circa 3rd Century B.C. (Collection: Patna Museum, Bihar)	
	iii. Seated Buddha from Katra Mound, Mathura-(Kushan Period-Mathura Style) Red-spotted Sand Stone, Circa 3rd Century AD. (Collection: Govt. Museum, Mathura)	
	iv. Jain Tirathankara (Gupta period) Stone Circa 5th Century A.D. (Collection: State Museum, Lucknow U.P.)	
3.	<b>Introduction to Ajanta Location</b> Period, No of caves, Chaitya and Vihara, paintings and sculptures, subject matter and technique etc.	
<b><u>Term-II</u></b>		
<b>Unit 3</b>	<b>Temple Sculpture, Bronzes and artistic aspects of Indo-Islamic Architecture</b>	<b>18 Periods</b>
	Artistic aspects of Indian Temple sculpture (6 <sup>th</sup> Century A.D. to 13 <sup>th</sup> Century A.D.) 1) Introduction to Temple Sculpture (6 <sup>th</sup> Century A.D. to 13 <sup>th</sup> Century A.D.) 2) Study and appreciation of following Temple-Sculptures:	
	i. Descent of Ganga (Pallava period, Mahabalipuram, Tamil Nadu), granite rock Circa 7 <sup>th</sup> Century A.D.	
	ii. Trimuti (Elephanta, Maharashtra) Stone Circa 9 <sup>th</sup> Century A.D.	
	iii. Lakshmi Narayana (Kandariya Mahadev Temple) (Chandela period, Khajuraho, Madhya Pradesh) Stone Circa 10 <sup>th</sup> Century A.D.	
	iv. Cymbal Player, Sun Temple (Ganga Dynasty, Konark, Orrisa) Stone Circa 13 <sup>th</sup> Century A.D.	

	v. Mother and Child (Vimal-Shah Temple, Solanki Dynasty, Dilwara, Mount Abu; Rajasthan) white marble, Circa 13 <sup>th</sup> Century A.D.	
<b>Unit-4</b>	<b>Bronzes and Artistic aspects of Indo-Islamic architecture</b>	
	1. Introduction to Indian Bronzes.	
	2. Method of casting (solid and hollow)	
	3. Study and appreciation of following South Indian Bronze:	
	i. Nataraj (Chola period Thanjavur Distt., Tamil Nadu) 12th Century A.D. (Collection : National Museum, New Delhi)	
	<b>Artistic aspects of the indo-Islamic architecture:</b> 1. Introduction 2. Study and appreciation of following architecture: i. Qutub Minar, Delhi ii. Gol Gumbad of Bijapur	

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