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**Delhi Public School, Hapur**  
**Annual Pedagogical Planner**  
**Session: 2022-23**  
**Class-XI**

# Subject - English Core (301)

	PROJECTED CONTENT	SPECIFIC OBJECTIVES	METHODOLOGY	LEARNING OUTCOMES	ACTIVITIES & ASSIGNMENTS (for differentiated learners)	RESOURCES	Working Day
July	<b>The Portrait of a Lady [H]</b>  By Khushwant Singh	<ul style="list-style-type: none"> <li>-make the students identify the genre to which the story belongs.</li> <li>-to understand the techniques used by the author</li> <li>- to enhance vocabulary</li> <li>-to strengthen family bonds</li> <li>- to enable them to comprehend the cultural background of the story.</li> <li>-to facilitate making connections between similar situations in different storylines/ life experiences</li> </ul>	<p>The session would begin with an interactive session wherein the learners would interpret the title of the lesson.</p> <p>The background knowledge of the author and his works would be given. The facilitator would develop the chain of events, with TEXT sequence or discourse/spoken with reference to the educational and personal domains.</p> <p>Difficult words and terms would be discussed. The prose will be explained. All possible questions and answers would be discussed and assigned.</p> <p><b>Enriching Vocabulary:</b> veritable bedlam of chirruping, frivolous rebukes, serenity, seclusion with resignation, sagging skins of dilapidated drum.</p>	<p>-They would develop their optimistic attitude towards life amidst many struggles.</p> <p>Will be able to develop an attitude to become more independent in thought and action, responsible and cooperative, understanding and tolerance, improved working relations, respect for individual identities in relation to other people.</p>	<p><b>Group Discussion on</b>  <b>The Portrait Of A Lady is a reminder about a growing distance between the young and the older generation.</b> Group activity comprising all range of learners.  One group comprising 6 learners</p>	<p>-Vocabulary booklet [S]  -Research on Kushwant Singh  -class reading with suitable expression and intonation  -PPT -Handout</p>	19
	<b>Poetry: A Photograph [H]</b>	-to encourage the students to appreciate poetry and read aloud	-pre-reading activity would be the first step wherein the	- the students would be able to grasp the theme and meaning of the	<b>A comparative study of the prose The Portrait of a</b>	Audio-Visual (visual representation of	

	<p><b>by</b> <b>Shirley Toulson</b></p> <p><i>with proper intonation -to prepare the students for poetic forms and adept them with the figures of speech, rhyme and rhythm</i></p> <p><i>-to read and recognize the purpose of economy of words and the hidden pathos and nuances of the lines, correlating them with author's background and personal experiences to build up didactics, empathy and sympathy with the loss of the speaker.</i></p>	<p>students would delve deep into the title of the poem and make an interpretation of the title as it indicates the subject and theme. (student- teacher interaction)</p> <p>They would compare the previous lesson The Portrait of a Lady with the title of the poem. The background of the poet would be discussed.</p> <p>The poem would be read aloud with proper intonation rhyme and rhythm.</p> <p>Difficult terms and words would be explained so that the students can predict the atmosphere of the world inside the poem. The poem would be explained covering the phrases, sentences and discourse as well as their structuring.</p> <p>Silent reading of the poem by the students within five minutes and listing the difficult terms.</p> <p>The figures of speech and rhyme scheme would be discussed.</p>	<p>poem.</p> <p>They would be able to read the poem with proper tone and rhyme and develop an interest in poetry.</p> <p>Their vocabulary would best rengthened.</p> <p>They would be able to draw a comparative study between human life and nature.</p> <p>They would be able to study a photograph</p>	<p><b>Lady and the poem A Photograph.</b></p> <p>The learners would discuss in their groups and draw a comparative analysis and present the synopsis of the discussion in the class.</p> <p><b>Group Activity</b></p> <p>For all range of learners comprising three students in one team-</p>	<p>the poem)</p> <p>Handouts</p>	
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			<b>WORD JOURNEY:</b> paddling, transient, perennial, laboured ease, wry, snapshot.				
<b>August</b>							18
	<b>The Summer of the Beautiful White Horse [S]</b>	<ul style="list-style-type: none"> <li>-To enhance familiarizing with specific background information of author / book excerpt / history</li> <li>- To facilitate an attitude to become honest and trustworthy in thought and action, responsible cooperative, understanding and tolerance, respect for national identities in relation to other people - democratic citizenship. [global aim]. Recognize Marginalization.</li> <li>-to recognize the technique of repetition as an element of style.</li> </ul>	<p>The session would begin with an interactive phase wherein the learners would interpret the title of the story.</p> <p>The background of the author would be given. The story would be read aloud. The theme and underlying meaning would be discussed.</p> <p>Difficult words would be listed and explained. The moral of the story would be discussed.</p> <p><b>Vocabulary Enrichment:</b> magnificence, wealthiest, pious, stillness, humour, irrigation ditches, crazy streak, enormous, capricious, vagrant.</p>	<p>The learners would be able to apply the literal, interpretative and critical level in analyzing a short story.</p> <p>They would be able to determine the tone of a short story.</p> <p>They would be able to comprehend the irony hidden in the story.</p>	<p><b>Research on the Armenian genocide.PPT</b> (a group presentation comprising all range of learners)</p> <p>Three students in one group comprising:</p>	<p>Vocabulary booklet [S]</p> <p>-Research on the Armenian genocide.PPT [a group presentation of 4-5]</p> <p>-Handout</p> <p>-Video clip on the times of William Saroyan [T-S]</p>	
	<b>(GRAMMAR): Determiners.</b>	<ul style="list-style-type: none"> <li>-to establish a clear understanding of determiners</li> <li>-to enable the learners to identify the types of determiners and use them in sentences.</li> </ul>	<ul style="list-style-type: none"> <li>- the session would be started with an audio-visual song of determiners.</li> <li>Quiz on determiners would be conducted. The learners would be asked to arrive at the rules. (Inductive method)</li> </ul>	<p>The learners would be able to identify determiners and use them appropriately.</p> <p>The comprehending skills would be improved.</p>	<ol style="list-style-type: none"> <li>1. Worksheets for all range of learners.</li> <li>2. Articles Grammar Auction (Group Activity for all range of learners)</li> <li>3. Shopping list</li> </ol>	PPT	

			The purpose and functions of the different types of determiners would be discussed with examples.	Sentence construction skills would be strengthened	game.		
	<b>WRITING SKILLS</b> <b>Advertisement (commercial/ classified)</b>	<ul style="list-style-type: none"> <li>-<i>to culminate in the production of an advertisement in one of several various forms of media, intended for a specific demographic.</i></li> <li>-<i>to enhance their creativity of ideas.</i></li> <li>-<i>to improve their critical media literacy.</i></li> <li>-<i>to construct own messages to convey the meanings they intend and to evoke the responses they desire.</i></li> </ul>	<p>A visual clipping of advertisements would be shown to the learners and they would interpret it through interaction. <b>(student-student interaction)</b></p> <p>The concept, format, style and purpose would be explained with examples.</p>	<p>Students will learn persuasive techniques used in advertising, specifically, pathos or emotion, logos or logic, and ethos or credibility/character. They will use this knowledge to analyze advertising in a variety of sources: print, television, and Web-based advertising. Students will also explore the concepts of demographics and marketing for a specific audience.</p>	<p><b>Creating Commercial advertisement in pairs.</b></p> <p>Pair Activity comprising-</p>	PPT Newspaper search	
	<b>We're Not Afraid to Die [H]</b>	-To allow a problem solving: identifying the problem; considering the options; weighing the pros and cons of each option; reaching a decision	<p>The session would start with an interactive session wherein the students would interpret the titles of the lessons.</p> <p>The background of the author would be given. The theme and story line would be explained.</p>	<p>The learners would be able to enhance their problem solving skills.</p> <p>They would be able to inculcate the values of determination and will power.</p>	<p>Class Reading with suitable expression, pronunciation and intonation.</p> <p>(Individual Activity)</p> <p>(For all range of learners)</p>	PPT Handout Vocabulary booklet [S]	

	<b>NOTE MAKING</b>	<p>-to summarize information from different written text, reconstructing arguments and accounts in a coherent presentation.</p> <p>-to express spontaneously, concisely and precisely, differentiating finer shades of significance even in the most complex situations</p> <p>-to express ideas with extra information and complexity, fluently and without difficulty in sentence construction.</p>	<p>In the beginning of the session, a text would be provided to the students to read and involve in note making to test previous knowledge.</p> <p>The facilitator would train the students to read a text minutely, or listen carefully to select, analyse and summarize the main points.</p> <p>Ways of making notes would be discussed:</p> <p>Annotation, outline notes, column notes, mind maps and summary notes.</p>	<p>The learners would be able to differentiate between annotation, outline notes, column notes, mind maps and summary notes from a text.</p> <p>They would be able to use the note taking suggestions to develop good notes based on classroom discussions</p>	<p>Group comprehension comprising all range of learners(3 students in one group)</p>	<p>PPT demonstrating the technique and art of note making.</p>
	<b>The Laburnum Top</b>	<p>To explore the beauty of nature through picturesque images</p> <p>To mark the silence and serenity prevailing in autumn season</p> <p>To enable them to understand complimentary relationship b/w the goldfinch and the laburnum tree.</p> <p>To introduce a technique called Animal Symbolism</p>	<p>The session would start by making them visualise 'Nature' in autumn season</p> <p>They would be introduced what is Animal Symbolism</p> <p>They would be explained why has the poet compared the laburnum tree to a machine</p> <p>The background of the poet would be discussed.</p> <p>The poem would be read</p>	<p>They would be able to mark the moods of the various phenomena of 'Nature' in autumn</p> <p>They would be able to learn the use of animals as symbols. The poet has used the goldfinch as a symbol of life and its functions</p> <p>They would be able to understand the message that life is a process of exchange and transformation. Without the goldfinch and the chicks, the laburnum is</p>	<p>Class Reading with suitable expression, pronunciation and intonation. (Individual Activity) (For all range of learners)</p>	<p>Handout</p>

		To appreciate the use of beautiful poetic devices	aloud with proper intonation rhyme and rhythm. Difficult terms and words would be explained so that the students can predict the atmosphere of the world inside the poem. The poem would be explained covering the phrases, sentences and discourse as well as their structuring.	just the another tree. In metaphorical and autobiographical interpretations, the goldfinch has been seen as the symbol of industrial revolution and poet's wife Sylvia		
	<b>The Address [Sn</b>	-To facilitate making connections between similar situations in different storylines/life experiences  -To help learners distinguish different perspectives; analyzing them; drawing conclusion/s  -To encourage the uncovering of motives; absorbing didactics	The teacher would develop the format in sequence or discourse (spoken with reference to the ethical/global and personal domains	Their Reading skills would be developed.	<b>Group Discussion on</b>  The Address ,a story of human predicament that follows the war	
	<b>WRITING SKILLS</b>  <b>Article Writing</b>	-To enhance familiarizing with specific background information of author / book excerpt /History  -To express ideas fluently and spontaneously without difficulty in expressions, grammar usage, format usage, relevant vocabulary.	The session would start with a prewriting activity to create an interest towards writing. The teacher would define what an article is and discuss the purpose of article writing. The different styles, subjects, purpose of article writing would be discussed.	The students would develop an interesttowards writing. Theirplanning and organizing techniqueswould be enhanced. They would be able toresearch on anysubject and derive information from factsand present him in theform of a	<b>(C2-C1)</b>  Article Writing on facts(based on research)  <b>(B2-B1)</b>  Article Writing deriving ideas from interviews.  <b>(A2-A1)</b>  Article Writing based onBravery	- newspaperarticles -magazine articles -written pieces on various subjects - displaying blogs ofvarious writers.

			<p>The teacher would explain the technique of accumulating ideas, focussing on ideas and facts, planning, organizing, evaluating, structuring and editing.</p> <p>They would be taught the importance and way of producing a finished piece of work with examples.</p> <p>The requirements of the content, beginning, body and end would be focussed.</p>	<p>written piece. Their creative writing would be analysed. The interpreting and evaluative skills would be strengthened.</p>	<p>and Will Power (hints would be given)</p>		
	<b>GRAMMAR</b> <b>Clauses</b>	<i>to enable the students to identify phrases and clauses</i>  <i>-to make them able to differentiate between phrases and clauses.</i>  <i>-to encourage grammar usage with relevant vocabulary</i>  <i>-to be able to comprehend and use grammatical organization for sentence completion</i>	<p>The teacher would start with the warm up session asking the students to frame sentences highlighting the difference between the subject and the predicate. The definitions of a phrase and clause would be given with examples. The difference between a phrase and a clause would be established. The dependent and independent clauses and phrases would be explained. Power Point presentations explaining phrases and clauses would be displayed.</p>	<p>-the students would be able to identify clauses and phrases and establish the difference between the two.</p> <p>-the creative skills would be enhanced.</p> <p>- Students would develop team spirit and learn the art of coordination and cooperation.</p>	<p><b>Story construction</b> using flash cards containing phrases and clauses. Students would be formed into groups to prepare flash cards containing phrases and clauses. The flash cards would be exchanged among the groups to construct a story using the given phrases and clauses. <b>(group activity)</b></p> <p><b>For all range of learners with one group comprising three students:</b></p>	<p>Handout [Practice sheets] [Ss] PPT -clause and phrase songs(audio visual)</p>	
September							22
	<b>Discovering Tut</b>	<i>-To enhance</i>	Pre- reading Activity:	The students would be	Pair Activity (for all)	PPT providing the	

	[H]	<p><i>familiarizing with specific background information of author / book excerpt / history of Tutankhamun.</i></p> <p>--<i>to guide the students to relate the characteristics of literature to larger cultural and human values</i></p> <p>-<i>identify the techniques used by the writer.</i></p>	<p>The session would start with an interaction on <b>the ways you think we could help prevent the extinction of languages and dialects.</b></p> <p>The title of the prose would be open for class interpretation.</p> <p>The facilitator would develop the format of text in sequence or discourse (spoken with reference to the ethical/global, public and personal domains of social and personal life.</p>	<p>able to grasp the theme and meaning of the prose.</p> <p>Their critical and creative thinking skills would be enhanced.</p> <p>They would be able to derive the moral values.</p> <p>They will be ready to accept the reality of life.</p> <p>Their vocabulary would be enriched.</p> <p>They would enhance their writing skills.</p>	<p>range of learners comprising:</p> <p>Pair formations</p> <p><b>Activity: research with pictures and present it in the form of an article.</b></p>	<p>synopsis.</p>	
	<b>WRITING SKILLS</b> Letter to the Editor	<p>-<i>To express ideas fluently and relevantly without difficulty in expressions and purpose, grammar usage, format usage, relevant vocabulary.</i></p>	<p>The format, rules, technique would be discussed with examples.</p> <p>The usage of language would be taught and students would be assigned written tasks.</p>	<p>They would develop an interest towards writing thus enhancing their writing skills.</p> <p>Their thinking skills would be enhanced.</p>	<p>For all range of learners to note progress.</p>	PPT	
	<b>GRAMMAR: Sentence Reordering</b>	<p><i>To be able to comprehend and use grammatical organization for quantifying and sentence completion.</i></p>	<p>The session would begin with few sentences read out by the teacher and written on the interactive board. (Brain boosters)</p> <p>The teacher would wait for the students' responses to know whether</p>	<p>They will be able to participate in the class discussion actively.</p> <p>They will be able to identify errors and frame grammatically correct sentences.</p>	<p><b>Worksheets for all range of learners. (C1-A1)</b></p>	<p>Green Board Educomp Module.</p>	

			they are able to point the errors.  The teacher discusses the errors and comes to the rules. (inductive Learning)			
	<b>POETRY: The Voice of the Rain [H]</b>	<i>To recognize the purpose of economy of words and the nuances of the lines that highlights the cyclic nature of rain and appreciates the diligence and divine quality of the speaker.</i>	The teacher would play a snippet of the sound of rain and the learners would infer ideas and involve in an interactive session.  The title of the poem would be open for class interpretation.  The knowledge background of the poet would be given. The poem would be read aloud with proper stress and intonation. The teacher would discuss the theme, poetic devices and structure and rhyme.	the students would be able to grasp the theme and meaning of the poem.  They would be able to read the poem with proper tone and rhyme and develop an interest in poetry. Their vocabulary would be strengthened.  They would be able to draw a comparative study between human life and nature.	Recitation and self Study  [group work of 3 on poetry writing on the wind, sun, moon or snow-highlighting the pride in their narration  for all range of learners comprising-	Snippet PPT
	<b>Recapitulation of Integrated Grammar and Writing Skills</b>					
<b>OCTOBER</b>	<b>REVISION FOR TERM I</b>					15

<b>November</b>	<b>Mother's Day [Sn]</b>	<i>To facilitate making connections between similar situations in different storylines/life experiences through the genre of theatre/drama that is more credible and realistic to comprehend the mother's stereotype and understand her significant role in family bonding-to empathize with her problems and seek resolution .</i>	The session would begin with an interaction on <b>my mother's daily lessons.</b>  The title of the lesson would be open for class interpretation.  The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed.	The learners would be able to develop their basic skills of language.  They would develop their readingskills and listeningskills  They would be able to comprehend the role of a mother and inculcate values ofrespect and obedience.	Write a Script and present a <b>Role Play</b> on Mother's Day.  For all range of learners in a group of six comprising-	PPT  Video Clippings  Snippets	20
	<b>Poster Making</b>	<i>-To express ideas aesthetically and relevantly with definition in purpose, expressions, grammar usage, format usage, relevant vocabulary.</i>	The teacher will acquire and display several different posters from various sources. Some examples may include:  Movie posters, Community events, Advertisements Campaign signs, Billboard pictures Full-page newspaper adsLearners will brainstorm the purposeof posters.  (Student- Teacher Interaction) Some responses may include: To get people's attention To get people to do something To give people information. The teacher would	Comprehend an effective Poster making as a tool ofVisualCommunication. Focus on the message to be delivered. Keep the sequence well ordered. Use graphs and Images effectively. Plan and organize aPoster presentation. Use spacing, margins,colours, and layout to maximize effectiveness and list information about their invention.	<b>Poster Making for allrange of learners.</b>	Visual aid	

			discuss and demonstrate the presentation stage, consolidation stage and the closing stage.				
	<b>Childhood [H]</b>	To read and recognize the purpose of human loss and the hidden pathos and nuances of the lines, correlating them with personal experiences- to build up didactics, empathy and sympathy with the loss of the speaker and the final resigned acceptance and optimism.	The poem would be read aloud and discussed. Difficult words would be listed out and discussed.  The synopsis would be shown with the help of a PPT.	They would be able to respond to a personal dilemma.  Their vocabulary would be enriched.  The analytical skills would be enhanced.	<b>Presentation by a group of three students comprising</b>	-	
	<b>The Adventure</b>	To make students explore the concept of time-travel through a science fiction.  to explore physics theories of catastrophe and lack of determinism in quantum theory  to compare the story to the adventure described in "we're not afraid to die"  To facilitate making connections between similar situations in different storylines/life	They would be introduced a new blend of history and physics  They would visualise professor Gaitonde's unique experience that is time- travelling into the past and experiencing something that never ever existed  The background knowledge of the author and his works would be given. The facilitator would develop the chain of events, with TEXT sequence or discourse/spoken with reference to the	They would be able to understand that the facts about a thing or an event are not always final, they can be interpreted in various ways.  They would learn that history too is written from the perspective of the writer; sometimes historical fact gets distorted because of the minds of the historians pre occupied with some specific ideas  They would be able to understand the idea of non- determinism in	<b>Discuss the following statements in groups of two pairs, each pair in a group tasking opposite point of view.</b>  1. A single event may change the course of the history of the nation.  2. Reality is what is directly experienced through the senses  3. The methods of inquiry of history, science and philosophy are	Handout	

		<p>experiences To read and recognize the purpose of human loss and the hidden pathos and nuances of the lines, correlating them with personal experiences- to build up didactics, empathy and sympathy with the loss of the speaker and the final resigned acceptance and optimism.</p>	<p>educational and personal domains.</p>	<p>quantum theory of physics that can be applied to history and suggests that at one time different views of the word may be formed by different people</p> <p>They would learn the catastrophe which says that so far as reality is concerned, all alternatives are viable but the observer can experience only one of them at a time</p>	<p>similar</p>		
	<b>Father to Son [H]</b>	<p>To read and recognize the purpose of economy of words and the hidden pathos and nuances of a precious father-child relationships that is crumbling , correlating with personal experiences- to build up didactics, empathy and sympathy with the loss of the father</p>	<p>The session would start with an interaction on interpreting the title of the poem.</p> <p>The title of the topic would be open for class interpretation. The background of the author would be given.</p> <p>The poem would be read aloud and discussed. Difficult words would be listed out and discussed. The synopsis would be shown with the help of a PPT.</p>	<p>To facilitate making connections between similar situations indifferent storylines/life experiences.</p> <p>To help learners Distinguish different perspectives; analyzing theme; drawing conclusion/s.</p> <p>The learners would unfold their logical thinking skills.</p>	<p>An analysis of the poem Father to Son through a Power Point presentation.</p> <p>For all range of learners in one group comprising six students-</p>	<p>Audi-visual demonstration of the poem.</p>	
December							22
	<b>Silk Road</b>	<p>To explore the panoramic view of Mount Kailash and</p>	<p>The title of the topic would be open for class interpretation.</p>	<p>They would be able to enhance their comprehension skills.</p>		<p>PPT HANDOUT</p>	

		<p>describe the travails of the difficult journey</p> <p>To capture the scenic beauty of the mountain and the path leading to it</p>	<p>The background of the author would be given.</p> <p>The lesson would be read aloud and discussed. Difficult words would be listed out and discussed. The synopsis would be shown with the help of a PPT.</p>	<p>They would develop their Optimistic attitude towards life amidst many struggles.</p> <p>They would be able to make connections between similar situations in different storylines/life experiences.</p>			
	<b>Birth [Sn]</b>	<ul style="list-style-type: none"> <li>-To allow a problem solving: identifying the problem; considering the options; weighing the pros and cons of each option; reaching an empathetic decision with the protagonist</li> <li>-To facilitate making connections between similar situations in different storylines/life experiences</li> <li>-To help learners distinguish different perspectives; analyzing them; drawing conclusion/s</li> <li>-To encourage the uncovering of motives; absorbing didactics.</li> </ul>				PPT	
January							15
	<b>The Tale of Melon City [Sn]</b>	<i>To read and recognize the purpose of</i>	The title of the poem would be open for class	The students would be able to grasp the	<b>Research on the literary</b>	Audio- visual presentation.	

		<p><i>economy and the hidden satire, irony and pun in the nuances - to build up didactics on the role of democracy in a state.</i></p>	<p>interaction.</p> <p>The knowledge background of the poet would be given.</p> <p>The poem would be read aloud with proper intonation rhyme and rhythm.</p> <p>Difficult terms and words would be explained so that the students can predict the atmosphere of the world inside the poem.</p> <p>The poem would be explained covering the phrases, sentences and discourse as well as their structuring.</p> <p>Silent reading of the poem by the students within five minutes and listing the difficult terms.</p> <p>The figure of speech and rhymescheme would be discussed.</p> <p>Questions and answers would be discussed.</p>	<p>theme and meaning of the poem.</p> <p>They would be able to read the poem with proper tone and rhyme and develop an interest in poetry.</p> <p>They would raise their concern and sensitize themselves for establishing inner as well as outer peace.</p>	<p><b>laureate Vikram Seth and relate the poem to one of his other poems.</b></p> <p>Group activity comprising all range of learners in a group of six students-</p>		
FEBRUARY	REVISION FOR TERM II						20

## Physics (042)

MONTH	UNIT/TOPIC	METHODOLOGY/ ACTIVITIES (through Online Labs Website)	LEARNING OUTCOME	WORKING DAYS
July	<p><b><u>Chapter–1: Physical World</u></b></p> <p>Physics-scope and excitement; nature of physical laws; Physics, technology and society.</p> <p><b><u>Chapter–2: Units and Measurements</u></b></p> <p>Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; significant figures. Dimensions of physical quantities, dimensional analysis and its applications.</p> <p><b><u>Chapter–3: Motion in a Straight Line</u></b></p> <p><b><u>Elementary concepts of differentiation and integration for describing motion, uniform and non- uniform motion, average speed and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations fo</u></b></p>	<p>To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence find its volume.</p> <p>To measure diameter of a given wire and thickness of a given sheet using screw gauge.</p>	<p>Emphasis on basic conceptual understanding of the content. Emphasis on use of Slunits, symbols, nomenclature of physical quantities and formulations as per international standards.</p> <p>Providing logical sequencing of units of the subject matter and proper placement of concepts with their linkage for better learning.</p>	19
August	<p><b><u>Chapter–4: Motion in a Plane</u></b></p> <p>Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, relative velocity, Unit vector; resolution of a</p>	<p>To determine radius of curvature of a given spherical surface by a spherometer.</p>	<p>Expose the learners to different processes used in Physics-related industrial and technological</p>	18

	<p>vector in a plane, rectangular components, Scalar</p> <p>and Vector product of vectors. Motion in a plane, cases of uniform velocity and uniform acceleration-projectile motion, uniform circular motion.</p>		applications.	
September	<p><u>Chapter–5: Laws of Motion</u></p> <p>Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion.(recapitulationonly) Law of conservation of linear momentum and its applications.</p> <p>Equilibrium of concurrent forces, Static andkinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).</p>	<p>To determine the mass of two differentobjects using a beam balance.</p>	<p>Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.</p> <p>Promote problem solvingabilities and creative thinking in learners.</p>	22
	<p><u>Chapter–5: Laws of Motion</u></p> <p>Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion.(recapitulationonly) Law of conservation of linear momentum and its applications.</p> <p>Equilibrium of concurrent forces, Static andkinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).</p>	<p>To determine the mass of two differentobjects using a beam balance.</p>	<p>Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.</p> <p>Promote problem solvingabilities and creative thinking in learners.</p>	
October	<b>REVISION AND TERM – I EXAMINATION</b>			15

<b>November</b>	<u>Chapter–5: Laws of Motion</u> Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion.(recapitulation only) Law of conservation of linear momentum and its applications. Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication. Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).	To determine the mass of two different objects using a beam balance.	Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners. Promote problem solving abilities and creative thinking in learners.	20
	<u>Chapter–6: Work, Energy and Power</u> Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: conservation of mechanical energy (kinetic and potential energies); non-conservative forces: motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.	To find the weight of a given body using parallelogram law of vectors.	Develop conceptual competence in the learners and make them realize and appreciate the interface of Physics with other disciplines.	
<b>December</b>	<u>Chapter–7: System of Particles and Rotational Motion</u> Centre of mass of a two-particle system, momentum conservation and centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation). <u>Chapter–8: Gravitation</u> Universal law of gravitation. Acceleration due to gravity (recapitulation only) and its variation with altitude and depth. Gravitational potential energy and	To study the relationship between force of limiting friction and normal reaction and to find the co-efficient of friction between a block and a horizontal surface.  Using a simple pendulum, plot its L-T <sup>2</sup> graph and use it to find the effective length of second's pendulum.	Promotion of process-skills, problem-solving abilities and applications of Physics concepts.	22

	gravitational potential, escape velocity, orbital velocity of a satellite, Geo-stationary satellites.			
<b>January</b>	<u>Chapter–9: Mechanical Properties of Solids</u> Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus <u>Chapter–10: Mechanical Properties of Fluids</u> Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise. <u>Chapter–11: Thermal Properties of Matter</u>	To determine Young's modulus of elasticity of the material of a given wire.  To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.	Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners. Promote problem solving abilities and creative thinking in learners.	15

January	<p><u>Chapter–9: Mechanical Properties of Solids</u>          Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus</p> <p><u>Chapter–10: Mechanical Properties of Fluids</u>          Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.</p> <p><u>Chapter–11: Thermal Properties of Matter</u>          Heat, temperature,( recapitulation only) thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity. Heat transfer- conduction, convection and radiation (recapitulation only), thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law, Greenhouse effect.</p> <p><u>Chapter–12: Thermodynamics</u>          Thermal equilibrium and definition of temperature (zeroth law of thermodynamics), heat, work and internal energy. First law of thermodynamics, isothermal and adiabatic processes. Second law of thermodynamics: reversible and irreversible processes</p> <p><u>Chapter–13: Kinetic Theory</u>          Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of</p>	<p>To determine Young's modulus of elasticity of the material of a given wire.</p> <p>To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.</p> <p>To determine specific heat capacity of a given solid by method of mixtures.</p> <p>To study the relation between frequency and length of a given wire under constant tension using sonometer.</p>	<p>Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners. Promote problem solving abilities and creative thinking in learners.</p> <p>Providing logical sequencing of units of the subject matter and proper placement of concepts with their linkage for better learning. Reducing the curriculum load by eliminating overlapping of concepts/content within the discipline and other disciplines.</p> <p>Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.</p> <p>Promote problem solving abilities and creative thinking in learners.</p>	15
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	<p>mean free path, Avogadro's number.</p> <p><u>Chapter-14: Oscillations</u></p> <p>Periodic motion - time period, frequency, displacement as a function of time, periodic functions. Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a loaded spring restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period. Free, forced and damped oscillations (qualitative ideas only), resonance.</p> <p><u>Chapter-15: Waves</u></p> <p>Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, Beats</p>		
<b>February</b>	<b>REVISION AND FINAL TERM EXAMINATION</b>		20

## **Chemistry (043)**

<b>Month Topic</b>	<b>Sub Topic</b>	<b>Activities/ Audio Visual Inputs</b>	<b>Assignment/ Discussion/ Project</b>	<b>Learning Outcomes</b>
<b>July (19 Workingdays)</b>  <b>Unit I:</b> <b>Some Basic Concepts of Chemistry (12 Periods)</b>  <b>Unit II: Structure of Atom(14 Periods)</b>	<p>General Introduction: Importance and scope of chemistry.</p> <p>Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules.</p> <p>Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.</p> <p>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.</p>	<p><b>A. Basic Laboratory Techniques</b></p> <ol style="list-style-type: none"> <li>1. Cutting glass tube and glass rod</li> <li>2. Bending a glass tube</li> <li>3. Drawing out a glassjet</li> <li>4. Boring a cork</li> </ol> <p><b>B. Characterization and Purification of Chemical Substances</b></p> <ol style="list-style-type: none"> <li>1. Determination of melting point of an organic compound.</li> <li>2. Determination of boiling point of an organic compound.</li> <li>3. Crystallization of impure sample of any one of the following: Alum, Copper Sulphate, Benzoic Acid.</li> </ol>	<p>Discussion of assignment given, Sample Papers</p>	<p>Have firm foundations in the fundamentals and application of current chemical and scientific theories.</p> <p>Are able to design, carry out, record and analyze the results of chemical experiments.</p> <p>Are able to use modern instrumentation and classical techniques, to design experiments, and to properly record the results of their experiment.</p> <p>Are skilled in problems solving, critical thinking and analytical reasoning.</p> <p>Are able to identify and solve chemical problems and explore new areas of research.</p> <p>Are able to use modern library searching and retrieval methods to obtain information about a topic, chemical, chemical technique, or an issue relating to chemistry.</p> <p>Knows the proper procedures and regulations for safe handling and use of chemicals and can follow the proper procedures and regulations for safe handling when using chemicals.</p> <p>Are able to communicate the results of their work to chemists and non-chemists.</p> <p>Understand the ethical, historic, philosophical, and environmental dimensions of problems and issues facing chemists.</p> <p>Find gainful employment in industry or government, be accepted at graduate or professional schools (law, medicine, etc.), or find employment in school systems as instructors or administrators</p>

		<p><b>E. Quantitative Estimation</b></p> <ul style="list-style-type: none"> <li>(i) Using a chemical balance.</li> <li>(ii) Preparation of standard solution of Oxalic acid.</li> <li>(iii) Determination of strength of a given solution of Sodium Hydroxide by titrating it against standard solution of Oxalic acid.</li> <li>(iv) Preparation of standard solution of Sodium Carbonate.</li> <li>(v) Determination of strength of a given solution of Hydrochloric acid by titrating it against standard Sodium Carbonate solution.</li> </ul>		
<b>August (18 Working days)</b> <b>Unit III: Classification of Elements and Periodicity in Properties (08 Periods)</b>  <b>Unit IV: Chemical Bonding and Molecular structure (14 Periods)</b>	<p>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</p> <p>Valence electrons, ionic bond,</p>	<p><b>E. Quantitative Estimation</b></p> <ul style="list-style-type: none"> <li>(i) Using a chemical balance.</li> <li>(ii) Preparation of standard solution of Oxalic acid.</li> <li>(iii) Determination of</li> </ul>	<p>Discussion of assignment given, Board Papers, Sample Papers</p> <p>Discussion of</p>	<p>Have firm foundations in the fundamentals and application of current chemical and scientific theories.</p> <p>Are able to design, carry out, record and analyze the results of chemical experiments.</p> <p>Are able to use modern instrumentation and classical techniques, to design experiments, and to properly record the results of their experiment.</p>

	<p>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.</p>	<p>strength of a given solution of Sodium Hydroxide by titrating it against standard solution of Oxalic acid.</p> <p>(iv) Preparation of standard solution of Sodium Carbonate.</p> <p>(v) Determination of strength of a given solution of Hydrochloric acid by titrating it against standard Sodium Carbonate solution.</p>	<p>assignment given, Board Papers, Sample Papers</p>	<p>Are skilled in problems solving, critical thinking and analytical reasoning.</p> <p>Are able to identify and solve chemical problems and explore new areas of research.</p> <p>Are able to use modern library searching and retrieval methods to obtain information about a topic, chemical, chemical technique, or an issue relating to chemistry.</p> <p>Knows the proper procedures and regulations for safe handling and use of chemicals and can follow the proper procedures and regulations for safe handling when using chemicals.</p> <p>Are able to communicate the results of their work to chemists and non-chemists.</p> <p>Understand the ethical, historic, philosophical, and environmental dimensions of problems and issues facing chemists.</p> <p>Find gainful employment in industry or government, be accepted at graduate or professional schools (law, medicine, etc.), or find employment in school systems as instructors or administrators</p>
<p><b>September (22 Working days)</b></p> <p><b>REVISION &amp; TESTS</b></p> <p><b>INTRODUCTION OF CHEMICAL BONDING</b></p> <p><b>Unit V: States of Matter:</b></p>	<p>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.</p>	<p><b>Project Work: CBSE Class 11 Chemistry</b></p> <p>Scientific investigations involving laboratory testing and collecting information from other sources.</p> <p>A few suggested Projects</p> <ul style="list-style-type: none"> <li>• Checking the bacterial</li> </ul>	<p>Discussion of assignment given, Sample Papers</p> <p>Discussion of assignment given, Board Papers, Sample Papers</p>	<p>Have firm foundations in the fundamentals and application of current chemical and scientific theories.</p> <p>Are able to design, carry out, record and analyze the results of chemical experiments.</p> <p>Are able to use modern instrumentation and classical techniques, to design experiments, and to properly record the results of their experiment.</p> <p>Are skilled in problems solving, critical thinking and analytical reasoning.</p> <p>Are able to identify and solve chemical problems and explore new areas of research.</p> <p>Are able to use modern library</p>

<b>Gases and Liquids (12 Periods)</b>	<p>Three states of matter, intermolecular interactions, types of bonding, melting and boiling points, role of gaslaws in elucidating the concept of the molecule,</p> <p>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.</p> <p>Deviation from ideal behaviour, liquefaction of gases, critical temperature, kinetic energy and molecular speeds (elementary idea)</p> <p>Liquid State: vapour pressure, viscosity and surface tension (qualitative idea only)</p>	<p>contamination in drinking water by testing sulphide ion.</p> <ul style="list-style-type: none"> <li>• Study of the methods of purification of water.</li> <li>• Testing the hardness, presence of Iron, Fluoride, Chloride, etc., depending upon the regional variation in drinking water and study of causes of presence of these ions above permissible limit (if any).</li> <li>• Investigation of the foaming capacity of different washing soaps and the effect of addition of Sodium Carbonate on it.</li> <li>• Study the acidity of different samples of tea leaves</li> </ul>	<p>Discussion of assignment given, Board Papers, Sample Papers</p>	<p>searching and retrieval methods to obtain information about a topic, chemical, chemical technique, or an issue relating to chemistry.</p> <p>Knows the proper procedures and regulations for safe handling and use of chemicals and can follow the proper procedures and regulations for safe handling when using chemicals.</p> <p>Are able to communicate the results of their work to chemists and non-chemists.</p> <p>Understand the ethical, historic, philosophical, and environmental dimensions of problems and issues facing chemists.</p> <p>Find gainful employment in industry or government, be accepted at graduate or professional schools (law, medicine, etc.), or find employment in school systems as instructors or administrators.</p>
<b>October (15 Working days)</b>	<b>REVISION AND TERM – I EXAMINATION</b>			
<b>November (20 Working days)</b> <b>Unit VI: Chemical Thermodynamics 16 Periods</b> <b>REVISION</b>	<p>Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics - internal energy and enthalpy, heat capacity and specific heat, measurement of <math>\Delta U</math> and <math>\Delta H</math>, Hess's law of constant heat summation, enthalpy of bond</p>	<p><b>F. Qualitative Analysis</b></p> <p>(a) Determination of one anion and one cation in a given salt</p> <p>Cations- <math>Pb^{2+}</math>, <math>Cu^{2+}</math>, <math>Al^{3+}</math>, <math>Fe^{3+}</math>, <math>Mn^{2+}</math>, <math>Ni^{2+}</math>, <math>Zn^{2+}</math>, <math>Co^{2+}</math>, <math>Ca^{2+}</math>,</p>	<p>Discussion of assignment given, Board Papers, Sample Papers</p>	<p>Have firm foundations in the fundamentals and application of current chemical and scientific theories.</p> <p>Are able to design, carry out, record and analyze the results of chemical experiments.</p> <p>Are able to use modern instrumentation and classical techniques, to design experiments, and to properly record the results of their experiment.</p>

	dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction).Introduction of entropy as a state function, Gibb's energy change for spontaneous and non-spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction).	Sr <sup>2+</sup> ,Ba <sup>2+</sup> , Mg <sup>2+</sup> , [NH <sub>4</sub> ] <sup>+</sup> Anions – [CO <sub>3</sub> ] <sup>2-</sup> , S <sup>2-</sup> , [SO <sub>3</sub> ] <sup>2-</sup> , [SO <sub>4</sub> ] <sup>2-</sup> , [NO <sub>3</sub> ] <sup>-</sup> , Cl <sup>-</sup> , Br <sup>-</sup> , I <sup>-</sup> , [PO <sub>4</sub> ] <sup>3-</sup> , [C <sub>2</sub> O <sub>4</sub> ] <sup>2-</sup> , CH <sub>3</sub> COO <sup>-</sup> (Note: Insoluble salts excluded)		Are skilled in problems solving, critical thinking and analytical reasoning. Are able to identify and solve chemical problems and explore new areas of research. Are able to use modern library searching and retrieval methods to obtain information about a topic, chemical, chemical technique, or an issue relating to chemistry. Knows the proper procedures and regulations for safe handling and use of chemicals and can follow the proper procedures and regulations for safe handling when using chemicals. Are able to communicate the results of their work to chemists and non-chemists. Understand the ethical, historic, philosophical, and environmental dimensions of problems and issues facing chemists. Find gainful employment in industry or government, be accepted at graduate or professional schools (law, medicine, etc.), or find employment in school systems as instructors or administrators
<b>Unit VII: Equilibrium (14 Periods)</b>	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, Henderson Equation, hydrolysis of salts (elementary idea), buffer	<b>E. Quantitative Estimation</b> (i) Using a chemical balance.  (ii) Preparation of standard solution of Oxalic acid.  (iii) Determination of strength of a given solution of Sodium Hydroxide by titrating it	Discussion of assignment given, Board Papers, Sample Papers	Have firm foundations in the fundamentals and application of current chemical and scientific theories. Are able to design, carry out, record and analyze the results of chemical experiments. Are able to use modern instrumentation and classical techniques, to design experiments, and to properly record the results of their experiment. Are skilled in problems solving, critical thinking and analytical reasoning. Are able to identify and solve

	<p>solution, solubility product, common ion effect (with illustrative examples).</p>	<p>against standard solution of Oxalic acid.</p> <p>(iv) Preparation of standard solution of Sodium Carbonate.</p> <p>(v) Determination of strength of a given solution of Hydrochloric acid by titrating it against standard Sodium Carbonate solution.</p>		<p>chemical problems and explore new areas of research.</p> <p>Are able to use modern library searching and retrieval methods to obtain information about a topic, chemical, chemical technique, or an issue relating to chemistry.</p> <p>Knows the proper procedures and regulations for safe handling and use of chemicals and can follow the proper procedures and regulations for safe handling when using chemicals.</p> <p>Are able to communicate the results of their work to chemists and non-chemists.</p> <p>Understand the ethical, historic, philosophical, and environmental dimensions of problems and issues facing chemists.</p> <p>Find gainful employment in industry or government, be accepted at graduate or professional schools (law, medicine, etc.), or find employment in school systems as instructors or administrators</p>
<p><b>December</b>  <b>(22 Working days)</b></p> <p><b>Unit IX: Hydrogen (08 Periods)</b></p>		<p><b>F. Qualitative Analysis</b></p> <p>(a) Determination of one anion and one cation in a given salt</p> <p>Cations- <math>\text{Pb}^{2+}</math>, <math>\text{Cu}^{2+}</math>, <math>\text{Al}^{3+}</math>,</p> <p><math>\text{Fe}^{3+}</math>, <math>\text{Mn}^{2+}</math>, <math>\text{Ni}^{2+}</math>, <math>\text{Zn}^{2+}</math>,  <math>\text{Co}^{2+}</math>, <math>\text{Ca}^{2+}</math>, <math>\text{Sr}^{2+}</math>, <math>\text{Ba}^{2+}</math>,  <math>\text{Mg}^{2+}</math>, <math>[\text{NH}_4]^+</math></p> <p>Anions – <math>[\text{CO}_3]^{2-}</math>, <math>\text{S}^{2-}</math>,  <math>[\text{SO}_3]^{2-}</math>, <math>[\text{SO}_4]^{2-}</math>, <math>[\text{NO}_3]^-</math>,  <math>\text{Cl}^-</math>, <math>\text{Br}^-</math>, <math>\text{I}^-</math>, <math>[\text{PO}_4]^{3-}</math>,  <math>[\text{C}_2\text{O}_4]^{2-}</math>, <math>\text{CH}_3\text{COO}^-</math></p> <p>(Note: Insoluble salts excluded)</p>	<p>Discussion of assignment given, Sample Papers</p> <p>Discussion of assignment given, Sample Papers</p>	<p>Have firm foundations in the fundamentals and application of current chemical and scientific theories.</p> <p>Are able to design, carry out, record and analyze the results of chemical experiments.</p> <p>Are able to use modern instrumentation and classical techniques, to design experiments, and to properly record the results of their experiment.</p> <p>Are skilled in problems solving, critical thinking and analytical reasoning.</p> <p>Are able to identify and solve chemical problems and explore new areas of research.</p> <p>Are able to use modern library searching and retrieval methods to obtain information about a topic, chemical, chemical technique, or an issue relating to</p>

<p><b>Unit X: s-Block Elements (Alkali and Alkaline Earth Metals) 10 Periods</b></p>	<p>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.</p> <p>Preparation and Properties of Some Important Compounds: Sodium Carbonate, Sodium Chloride, Sodium Hydroxide and Sodium Hydrogencarbonate, Biological importance of Sodium and Potassium.</p> <p>Calcium Oxide and Calcium Carbonate and their industrial uses, biological importance of Magnesium and Calcium.</p>			<p>chemistry. Knows the proper procedures and regulations for safe handling and use of chemicals and can follow the proper procedures and regulations for safe handling when using chemicals.</p> <p>Are able to communicate the results of their work to chemists and non-chemists.</p> <p>Understand the ethical, historic, philosophical, and environmental dimensions of problems and issues facing chemists.</p> <p>Find gainful employment in industry or government, be accepted at graduate or professional schools (law, medicine, etc.), or find employment in school systems as instructors or administrators</p>
	<p>Group 13 Elements: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous properties of first element of the group, Boron - physical and chemical properties, some important compounds, Borax, Boric acid, Boron Hydrides, Aluminium: Reactions with acids and alkalies, uses.</p>	Revision	<p>Discussion of assignment given, Sample Papers</p>	<p>Have firm foundations in the fundamentals and application of current chemical and scientific theories.</p> <p>Are able to design, carry out, record and analyze the results of chemical experiments.</p> <p>Are able to use modern instrumentation and classical techniques, to design experiments, and to properly record the results of their experiment.</p> <p>Are skilled in problems solving, critical thinking and analytical reasoning.</p> <p>Are able to identify and solve chemical problems and explore</p>

<p><b>January (15 Working days)</b></p> <p><b>Unit VIII: Redox Reactions(06 Periods)</b></p> <p><b>Unit XII: Some Basic Principles and Techniques of organic chemistry (14 Periods)</b></p>	<p>Group 14 Elements: General introduction, electronic configuration, occurrence, variation of properties, oxidation states, trends in chemical reactivity, anomalous behaviour of first elements. Carbon-catenation, allotropic forms, physical and chemical properties; uses of some important compounds: oxides.</p> <p>Important compounds of Silicon and a few uses Silicones, Silicates and Zeolites, their uses.</p> <p>General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic</p> <p>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.</p> <p>Classification of Hydrocarbons</p> <p>Aliphatic Hydrocarbons:</p> <p>Alkanes - Nomenclature, isomerism, conformation (ethane</p>		<p>Discussion of assignment given, Sample Papers</p>	<p>new areas of research. Are able to use modern library searching and retrieval methods to obtain information about a topic, chemical, chemical technique, or an issue relating to chemistry.</p> <p>Knows the proper procedures and regulations for safe handling and use of chemicals and can follow the proper procedures and regulations for safe handling when using chemicals.</p> <p>Are able to communicate the results of their work to chemists and non-chemists.</p> <ul style="list-style-type: none"> <li>• Understanding the various ways organic chemical structures are depicted.</li> <li>• Drawing organic chemical structures from names (and vice-versa)</li> <li>• Naming Structures including stereoisomers and geometric isomers</li> <li>• Knowledge of the two models of bonding used in organic chemistry</li> <li>• Understanding the basic concepts of thermodynamics and kinetics as applied to organic chemistry</li> <li>• Understanding the</li> </ul>
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<b>Unit XIII: Hydrocarbons (12 Periods)</b>	only), physical properties, chemical reactions including free radical mechanism of halogenation,			
	<p>combustion and pyrolysis.</p> <p>Alkenes - Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markownikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.</p> <p>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.</p> <p>Aromatic Hydrocarbons:</p> <p>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.</p> <p>Environmental pollution - air, water</p>		<p>Discussion of assignment given, Sample Papers</p>	<p>concepts of acidity and basicity, <math>pK_a</math>, Lewis acids, Lewis bases, electrophiles and nucleophiles as applied to organic chemistry</p> <ul style="list-style-type: none"> <li>• Use of 'curly arrows' to depict reaction mechanisms</li> <li>• Knowledge of the basic mechanisms of substitution and elimination (<math>S_N1</math>, <math>S_N2</math>, <math>E1</math>, <math>E2</math>, <math>E1cb</math>)</li> <li>• Basic reactions of alkanes, alkenes, alkynes, alkyl halides and aromatic compounds</li> <li>• Understanding the various ways organic chemical structures are depicted.</li> <li>• Drawing organic chemical structures from names (and vice-versa)</li> <li>• Naming Structures including stereoisomers and geometric isomers</li> <li>• Knowledge of the two</li> </ul>

	and soil pollution, chemical reactions in atmosphere, smog, major atmospheric pollutants, acid rain, ozone and its reactions,			models of bonding used in organic chemistry <ul style="list-style-type: none"> <li>• Understanding the basic concepts of</li> </ul>
<b>Unit XIV: Environmental Chemistry (06 Periods)</b>	effects of depletion of ozone layer, greenhouse effect and global warming-pollution due to industrial wastes, green chemistry as an alternative tool for reducing pollution, strategies for control of environmental pollution.			thermodynamics and kinetics as applied to organic chemistry <ul style="list-style-type: none"> <li>• Understanding the concepts of acidity and basicity, <math>pK_a</math>, Lewis acids, Lewis bases, electrophiles and nucleophiles as applied to organic chemistry</li> <li>• Use of 'curly arrows' to depict reaction mechanisms</li> <li>• Knowledge of the basic mechanisms of substitution and elimination (<math>S_N1</math>, <math>S_N2</math>, <math>E1</math>, <math>E2</math>, <math>E1cb</math>)</li> <li>• Basic reactions of alkanes, alkenes, alkynes, alkyl halides and aromatic compounds</li> </ul>
<b>February (20 Working days)</b>	<b>REVISION AND FINAL TERM EXAMINATION</b>			

## Biology (044)

MONTH	UNIT/TOPIC	METHODOLOGY/ACTIVITIES	LEARNING OUTCOME	WORKING DAYS
<b>July</b>				
	1. The Living Word 2. Biological Classification	Characteristics of livings, classification, biodiversity, taxonomic categories, taxonomic keys.  Kingdom system, Kingdom Monera, Kingdom Fungi and itsclassification, virus, lichens.	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.  Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Students are able to answer different between taxa and taxonomic categories.  Students are able to classify bacteria andfungi on the basis of characteristics.
<b>August</b>	1. Plant Kingdom	Plants, classification of pants, Algae, bryophyte, pteridophyta,gymnosperms, angiosperms,	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Students are able to classify plants on the basis of characteristics.
<b>September</b>				
Anatomy of Flowering Plants	1. Structural Organization of Animals  2. The Cell	Tissue, types of plant tissues, tissue system, internal structureof dicot and monocot root, stemand leaf.  Secondary growth in roots  Animal tissue, Epithelial tissue and types of epithelial tissues, Connective tissue and types ofconnective tissue, muscular tissue and nervous tissue.  Cell, structure of cell, structuralcomponents, types of cell, cell organelles - cell wall, cell membrane, cytoplasm, nucleus, mitochondria, golgi bodies, plastids, ribosomes, ER, microtubules, cilia flagella.	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.  Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.  Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Students are able to classify plants tissues,they understood the difference between primary and secondary growth.  Students are able to classify animal tissues,they can draw diagrams.  Students are able to differentiate between types of cells, can recognize different cell organelle.
October	REVISION AND TERM – I EXAMINATION			15

<b>November</b>	3. Biomolecules	Macromolecules, micromolecules, carbohydrates, lipids, proteins – Primary, secondary, tertiary and quarternary proteins, enzymes,	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Can differentiate between biomolecules, can explain the significance of enzymes.	
		types, action, classification and nomenclature of enzymes.			20
4. Cell Cycle and Cell Division	Cell division, Interphase, M-phase, Mitosis, meiosis, significance of meiosis.	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Able to different between somatic and germ cells.		
5. Transport in Plants	Water, water plant relationship, absorption	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Can answer, how does absorption of water occur in plants. Role of transpiration.		
<b>December</b>	6. Mineral Nutrition in Plants	Minerals, micro and macronutrients, Significance and deficiency symptoms of – N, Mg, S, Ca, K, P, Cl, Fe, Zn, Mo, Ni, Cu etc, Nutrient toxicity, critical concentration, transport of minerals, nitrogen fixation, nodule formation.	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Able to differentiate between macro and micro nutrients. Role of nutrients in growth.	22
7. Respiration in Plants	Do Plants Breathe? Glycolysis, Fermentation, Aerobic Respiration, The Respiratory Balance Sheet, Amphibolic Pathway, Respiratory Quotient	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Able to answer the glycolysis, krebs cycle, and mitochondria are called power house of cell		

<b>January</b>				
8. Photosynthesis in higher plants	What do we Know? Early Experiments, Where does Photosynthesis take place? How many Pigments are involved in Photosynthesis? What is Light Reaction? The Electron Transport, Where are the ATP and NADPH Used? The C4 Pathway, Photorespiration, Factors affecting Photosynthesis.  Growth, Differentiation,	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Students are able to explain the steps occur in presence of light and absence of light.  <b>Art integrated activity – To</b> <b>prepare a model of any body system by the help of clay.</b>	Can differentiate between growth  promoting and growth inhibiting hormones.
9. Growth Regulators and Development	Dedifferentiation and Redifferentiation, Development, Plant Growth Regulators, Photoperiodism, Vernalisation			
10. Digestion and Absorption	Digestive System, Digestion of Food, Absorption of Digested Products, Disorders of Digestive System	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Students are able to differentiate between teeth, know the role of different enzymes in digestion.	
11. Breathing and Exchange of Gases	Respiratory Organs, Mechanism of Breathing, Exchange of Gases, Transport of Gases, Regulation of Respiration, Disorders of Respiratory System.	Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.	Students are able to answer why lungs are significant in respiration.	20

12. Excretory Products and their Elimination  13. Body Fluids and Circulation	<p>Human Excretory System, Urine Formation, Function of the Tubules, Mechanism of Concentration of the Filtrate, Regulation of Kidney Function, Micturition, Role of other Organs in Excretion, Disorders of the Excretory System</p> <p>Blood, Lymph (Tissue Fluid), Circulatory Pathways, Double Circulation, Regulation of Cardiac Activity, Disorders of Circulatory System.</p>	<p>Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.</p> <p>Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.</p>	<p>Students are able to draw diagram of kidney and nephron. Can explain formation of urine.</p> <p>Students are able to state the role of ECG, they can differentiate between Heart Attack and Cardiac Arrest.</p>	
21. Neural Control and Coordination	<p>Neural System, Human Neural System, Neuron as Structural and Functional Unit of Neural System, Central Neural System, Reflex Action and Reflex Arc, Sensory Reception and Processing</p>	<p>Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.</p>	<p>Students are able to differentiate between CNS and PNS. Can explain.</p>	
14. Locomotion and Movement	<p>Types of Movement, Muscle, Skeletal System, Joints, Disorders of Muscular and Skeletal System</p>	<p>Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.</p>	<p>Students know different types of bones and joints.</p>	
22. Chemical Control and Coordination	<p>Endocrine Glands and Hormones, Human Endocrine System, Hormones of Heart, Kidney and Gastrointestinal Tract, Mechanism of Hormone Action</p>	<p>Zoom meeting, PPt, Board Marker, lecture method, short videos and testgoogle.</p>	<p>They learnt the role of hormones and diseases caused by their deficiency.</p>	
February	<p align="center"><b>REVISION AND FINAL TERM EXAMINATION</b></p>			20

## **Accountancy (055)**

<b>Month</b>	<b>Topic</b>	<b>Methodology/Activities</b>	<b>Learning Outcome</b>	<b>Working Days</b>
July	<p><b>Accounting- concept,</b> objectives, advantages and limitations, types of Branches of accounting; types of accounting information, users of accounting information and their needs.</p> <p><b>Basic accounting terms:</b> business transaction, account, capital, drawings, liabilities (non - current and current); assets (non-current and current) fixed assets (tangible and intangible assets), receipts (capital and revenue), expenditure (capital, revenue and deferred), expense, income, profits, gains and losses, purchases, purchases returns, sales, sales return, goods, stock, inventory, trade receivables (debtors and bills receivable), trade payables (creditors and bills payable), cost, vouchers, discount - trade and cash</p>	Smart Board; Lecture Notes,  Zoom Classes PPT  <b>Assignment</b>  <ul style="list-style-type: none"> <li>• NCERT Questions</li> <li>• CBSE Sample Paper</li> <li><input type="checkbox"/> CBSE TestPaper</li> <li>• <b>Revision worksheets</b></li> <li>• Practice Assignment</li> </ul>	<p><b>After going through this Unit, the students will be able to</b></p> <p>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.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> identify / recognize the individual(s) and entities that use accounting information for serving their needs of decision making</li> <li>Understand the various terms used in accounting and differentiate between different related terms like current and non-current, capital and revenue.</li> <li><input type="checkbox"/> give examples of terms like business transaction, liabilities, assets, expenditure and purchases explain that sales/purchases include both cash and credit sales/purchases relating to the accounting year</li> <li><input type="checkbox"/> Differentiate among income, profits and gains.</li> </ul>	19
August	<p><b>Theory Base of Accounting:</b> Fundamental accounting assumptions: going concern, consistency and accrual.</p> <p>Accounting principles: accounting entity, money measurement, accounting period, full disclosure, materiality, prudence, cost concept, matching concept and dual aspect.</p> <p>Accounting Standards and IFRS (International Financial Reporting Standards): concept and objectives</p> <p>Double entry system of accounting.</p>	Smart Board; Lecture Notes,  PPT Zoom Classes  <b>Assignment</b>  <ul style="list-style-type: none"> <li>• NCERT Questions</li> <li>• CBSE Sample Paper</li> <li><input type="checkbox"/> CBSE TestPaper</li> <li>• Practice Assignment</li> </ul>	<p><b>After going through this Unit, the students will be able to</b></p> <p>State the meaning of fundamental accounting assumptions and their relevance in accounting.</p> <ul style="list-style-type: none"> <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</li> </ul>	18

			of accounting transactions follows double entry system. •Understand the need of IFRS	
September	<p><b>Bases of accounting</b> - cash basis and accrual basis.</p> <p><b>Recording of Transactions</b> Accounting equation: analysis of transactions using accounting equation.</p> <p><b>Rules of debit and credit:</b> for assets, liabilities, capital, revenue and expenses.</p> <p>Documents/ supporting Origin of transactions- source vouchers (invoice, cash memo, pay in slip, cheque etc.), debit note, credit note, preparation of accounting vouchers -cash (debit and credit) and non-cash (transfer).</p> <p>Goods and Services Tax (GST): Characteristics and Objective <b>Journal</b>. Books of original entry: format and recording –</p> <p><b>Ledger</b> - format, posting from journal, cash book and other special purpose books, balancing of accounts</p>	Smart Board; Lecture Notes,  Zoom Classes  PPT  <b>Assignment</b>  <ul style="list-style-type: none"> <li>• NCERT Questions</li> <li>• CBSE Sample Paper</li> <li>□ CBSE TestPaper</li> <li>• Practice Assignment</li> </ul> Smart Board; Lecture Notes,  Zoom Classes PPT  <b>Assignment</b>  <ul style="list-style-type: none"> <li>• NCERT Questions</li> <li>• CBSE Sample Paper</li> <li>□ CBSE TestPaper</li> <li>• Practice Assignment</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 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>• 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 accounting equation</li> <li>• explain the effect of a transaction (increase or decrease) on the assets, liabilities, capital, revenue and expenses.</li> <li>• Identify both aspect of transaction and □ which aspect of the transaction is to be given debited and which aspect of the transaction is to be given credited</li> <li>• Appreciate that on the basis of source documents, accounting vouchers are prepared for recording transaction in the books of accounts.</li> </ul> <p><b>After going through this Unit, the students will be able to</b></p> <p>Develop the understanding of recording of transactions in journal and the skill of calculating GST. How posting is done from journal, cash book and other special purpose books, balancing of accounts</p>	22
October	<b>REVISION AND TERM – I EXAMINATION</b>			15
November	Trial balance: objectives and preparation {Scope: Trial balance with balance method only}	<b>Art Integrated Learning</b> Prepare a scrap book by pasting various assets around you &	<b>After going through this Unit, the students will be able to</b>	20

	<p><b>Cash book:</b> simple cash book, cash book with bank columns and pettycash book.</p> <p><b>Ledger</b> posting from cash book And balancing of accounts</p> <p>Other books: purchases book, sales book, purchases returns book, sales returns book and journal proper.</p> <p><b>Ledger</b>posting from other special purpose books, balancing of accounts</p> <p><b>Bank reconciliation statement-</b> concept, calculating bank balance at an accounting date: need and preparation</p> <p><b>Depreciation</b>concept, need and factors affecting depreciation; methods of computation of depreciation: straight line method, written down value method (excluding change in method)</p> <p>Accounting treatment of depreciation: by charging to asset account, by creating provision for depreciation/ accumulated depreciation account, treatment of disposal of asset</p>	<p>classify them into types of Assets.</p> <p>Smart Board; Lecture Notes,Zoom Classes</p> <p>PPT</p> <p><b>Assignment</b></p> <ul style="list-style-type: none"> <li>•NCERT Questions</li> <li>•CBSE Sample Paper</li> <li>□CBSE TestPaper</li> <li>•Practice Assignment</li> </ul>	<p>preparing trial balance and develop the skill of preparing trial balance.</p> <ul style="list-style-type: none"> <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> </ul> <p>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</p> <ul style="list-style-type: none"> <li>•develop understanding of preparing bank reconciliation statement</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> <li>•Appreciate the method of asset disposal through the concerned asset account or by preparing asset disposal account.</li> </ul>	
<b>December</b>	<p><b>Provisions and reserves:</b> concept, objectives and difference between provisions and reserves; types of reserves-revenue reserve, capital reserve, general reserve and specific reserves</p> <p><b>Accounting for Bills of Exchange.</b> Bills of exchange and promissory note: definition, features, parties, specimen</p>	<p>Smart Board; Lecture Notes,</p> <p>Zoom Classes</p> <p>PPT</p> <p><b>Assignment</b></p> <ul style="list-style-type: none"> <li>•NCERT Questions</li> </ul>	<p><b>After going through this Unit, the students will be able to</b></p> <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> <li>•acquire the knowledge of using bills</li> </ul>	22

	<p>and distinction. Important terms : term of bill, due date, days of grace, date of maturity, discounting of bill, endorsement of bill, bill sent for collection, dishonor of bill, noting of bill.</p>	<ul style="list-style-type: none"> <li>•CBSE Sample Paper</li> <li><input type="checkbox"/> CBSE TestPaper</li> <li>•Practice Assignment</li> </ul> <p>Draw/design a cheque book and an ATM Card.</p>	<p>of exchange and promissory notes for financing business transactions;</p> <ul style="list-style-type: none"> <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> </ul>	
	<p><b>Rectification of Errors</b> Errors: types-errors of omission, commission, principles, and compensating; their effect on Trial Balance. Detection and rectification of errors; preparation of suspense account.</p>	Smart Board; Lecture Notes, Zoom Classes PPT	<p><b>After going through this Unit, the students will be able to</b></p> <ul style="list-style-type: none"> <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>	
January	<p><b>Financial statements:</b> objective and importance. Trading and profit and loss account: gross profit, operating profit and net profit. Balance sheet: need, grouping, marshaling of assets and liabilities.</p>	Smart Board; Lecture Notes, PPT Zoom Classes  <p><b>Assignment</b></p> <ul style="list-style-type: none"> <li>•NCERT Questions</li> <li>•CBSE Sample Paper</li> <li><input type="checkbox"/> CBSE TestPaper</li> <li>•Practice Assignment</li> </ul> <p>Make a flowchart of types of Expenses. Prepare a scrapbook showing direct &amp; indirect expenses.</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</li> <li>•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> </ul> <p>provisions, abnormal loss etc.</p>	15

	<p>Adjustments in preparation of financial statements: with respect to closing stock, outstanding expenses, prepaid expenses, accrued income, and income received in advance, depreciation, bad debts, provision for doubtful debts, provision for discount on debtors, abnormal loss, goods taken for personal use, goods distributed as free samples and manager's commission.</p> <p>Preparation of Trading and Profit and Loss account and Balance Sheet of sole proprietorship</p> <p><b>Incomplete records:</b> uses and limitations. Ascertainment of profit/loss by statement of affairs method.</p>	<p>Smart Board; Lecture Notes, Zoom Classes PPT</p> <p><b>Assignment</b></p> <ul style="list-style-type: none"> <li>• NCERT Questions</li> <li>• CBSE Sample Paper</li> <li><input type="checkbox"/> CBSE Test Paper</li> <li>• Practice Assignment</li> </ul>	<p><b>After going through this Unit, the students will be able to</b></p> <ul style="list-style-type: none"> <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>	20
	<p><b>Introduction to computer</b> and accounting information system {AIS}: Introduction to computers (elements, capabilities, limitations of computer system),</p>	<p>Smart Board; Lecture Notes, PPT Zoom Classes</p> <p><b>Assignment</b></p> <ul style="list-style-type: none"> <li>• NCERT Questions</li> <li>• CBSE Sample Paper</li> <li><input type="checkbox"/> CBSE Test Paper</li> <li>• Practice Assignment</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> <li>• Appreciate the need for use of computers in accounting for preparing accounting reports.</li> <li>• develop the understanding of comparing the manual and computerized accounting process and appreciate the advantages and limitations of automation</li> <li>.<input type="checkbox"/> Understand the different kinds of accounting software.</li> </ul>	
February	<b>REVISION AND FINAL TERM EXAMINATION</b>			20

## Economics (030)

Month	Topic	Sub Topics	Methodology	Learning Outcomes	No. of Workin gdays
<b>Introductory Micro economics and statistics for economics</b>					
July	Chap 1 Economics & Economy Chap 2 Central Problems of Economy Chap 1 Concept of Economics	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.  What is Economics? Meaning, scope, functions and importance of statistics in Economics	-Online classes (Zoom /Google class room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples	Equipment with basic tools of economics and statistics to analyse economic issues. This is pertinent for even those who may not pursue this course beyond senior secondary stage	19
August	Chap 10 Central Tendency – Median & Mode Chap 3 Consumers Equilibrium- Utility Analysis	Measures of Central Tendency- Arithmetic mean, median and mode.  Consumer's equilibrium - meaning of utility, marginal utility, law of diminishing marginal utility, conditions of consumer's equilibrium using marginal utility analysis.	Online classes (Zoom /Google class room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples	The students are made familiar about measures of central tendency and various methods to calculate mean, median and mode in various series	18
September	Chap 3 Consumers Equilibrium- Indifference curve 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.	Online classes (Zoom /Google class room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples	Equipment with basic tools of economics and statistics to analyse economic issues	22

	Chap 2,3,4 Collection of data, census and sample method,  Chap 4 (contd.) ,5 & 6 Organization of Data, Presentation –	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.	Online classes (Zoom /Googleclass room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples	To develop the skill of data collection, organisation and presentation. It also aims to equip the learners with some basic statistical tools so that they can easily analyse, and comprehend any economic information and illustrate appropriate conclusions. The units deals with chapters on the meaning of	
	Textual & Tabular, Diagrammatic  Presentation-Bar & Pie Diagram.	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 graphs)		economics as well as the meaning and scope of statistics in economics, data collection, organization and presentation and statistical tools and interpretation. There is a separate unit that deals with developing projects in economics. Here the students are expected to develop projects, which have primary data, secondary data or both.	
October	<b>REVISION AND TERM – I EXAMINATION</b>				15
November	Chap 5 Theory of demand Chap 5(contd.),6. Theory of demand, Price Elasticity of demand.	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.	Online classes (Zoom /Googleclass room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples	Students are able to answer the following-  -Describe and differentiate between major economic systems -Explain the determinants of demand -Shift and movement of demand	20

<b>December</b>		First Term examination	First Term examination	First Term examination	22
	Presentation of data  Chapter- Production function  Chapter- Concept of cost	(i) Geometric forms (bar diagrams and pie diagrams), (ii) Frequency diagrams (histogram, polygon) and (iii) Arithmetic line graphs (time series graph).'  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 relations.	Online classes (Zoom /Googleclass room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples.  Art Integrated activity – prepare a scrap book showing economic aspects of bamboo forests of Manipur.	After reading this material the learners will be able to: 1. Define the basic concepts of presentation of data. 2. Enlist various concepts to be remembered while calculating the costs 3. Recognize the formulae for finding out different costs.	22
<b>January</b>	Chap 9 &12 Concept of Revenue ,Forms of Market.	Revenue - total, average and marginal revenue - meaning and their relationship.  Perfect competition - Features; Determination of market equilibrium and effects of shifts in demand and supply.	Online classes (Zoom /Googleclass room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples	After reading this material the learners will be able to: 1. Define revenue, different types of markets. 2. List out the components of revenue 3. Identify the different type of market conditions..	15
	Chap 13 Index Numbers.  Chapter- Theory of supply	.meaning, types - wholesale price index, consumer price index, uses of index numbers; Inflation and index numbers.  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.	Online classes (Zoom /Googleclass room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples	After reading this material the learners will be able to: 1. Define types of index numbers. 2. Draw applications of demand and supply 3. Recognize the formulae for finding out different index numbers.	

	Chap 11 Measures of Dispersion, Chap 13 Market Equilibrium- Perfect Competition	absolute dispersion (standard deviation);  Simple Applications of Demand and Supply: Price ceiling, price floor.	Online classes (Zoom /Googleclass room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples	Students were able to understand the concepts and able to answer to the given questions. - Few student need more efforts.	
	Chapter 12 Correlation. REVISION.	Correlation-karl pearsons method (two variable ungrouped data.)	Online classes (Zoom /Googleclass room) -Power point presentations -Short videos. - chalk board method.(online) -lecture method . -Explanation with examples	The students are also instructed about how to prepare projects and its relevance in the real life.-s	
<b>February</b>	<b>REVISION AND FINAL TERM EXAMINATION</b>				<b>20</b>

## **Business Studies (054)**

<b>Month</b>	<b>Content</b>	<b>Audio Visual Inputs</b>	<b>Activities/ Methodology/ Discussion/ Project</b>	<b>Learning Outcomes</b>	<b>Working days</b>
<b>July</b>	<b>Part A: Foundation of Business</b> Concept includes meaning and features <b>Unit 1: Evolution and Fundamentals of Business</b>		<b>Online teaching through Zoom:</b> - Case Studies - PPT - Short Videos - test through Google Classroom		<b>19</b>
	History of Trade and Commerce in India: Indigenous Banking System, Rise of Intermediaries, Transport, Trading Communities: Merchant Corporations, Major Trade Centres, Major Imports and Exports, Position of Indian Sub-Continent in the World Economy.	Related Video	Choose a locally operated trading or business unit. Find out the kind of risks it faces in business and the way it deals with them.	To acquaint the History of Trade and Commerce inIndia	
	Business – meaning and characteristics			Understand the meaning of business with special reference to economic and non-economic activities. Discuss the characteristics of business.	
	Business, profession and employment- Concept			Understand the concept of business, profession and employment. Differentiate between business, profession andemployment.	
	Objectives of business			Appreciate the economic and social objectives ofbusiness. Examine the role of profit in business.	

	Classification of business activities - Industry and Commerce			Understand the broad categories of business activities- industry and commerce.	
	Industry-types: primary, secondary, tertiary Meaning and subgroups			Describe the various types of industries.	
	Commerce-trade: (types-internal, external; wholesale and retail) and auxiliaries to trade; (banking, insurance, transportation, warehousing, communication, and advertising) – meaning		<b>Select a local business enterprise and find out the objectives it pursues. Check why it does not pursue other objectives</b>	Discuss the meaning of commerce, trade and auxiliaries to trade. Discuss the meaning of different types of trade and auxiliaries to trade. Examine the role of commerce- trade and auxiliaries to trade.	
	Business risk-Concept			Understand the concept of risk as a special characteristic of business. Examine the nature and causes of business risks.	
August	<b>Unit 2: Forms of Business organizations</b>		<b>Online teaching through Zoom:</b> - Case Studies - PPT - Short Videos <b>test through Google Classroom</b>		18
	Sole Proprietorship-Concept, merits and limitations.	Related video	Divide students into teams to work on the following (a) To study the profiles of any five neighbourhood	List the different forms of business organizations and understand their meaning. Identify and explain the concept, merits and limitations of Sole Proprietorship.	
	Partnership-Concept, types, merits and limitation of partnership, registration of a partnership firm, partnership deed. Types of partners		(b) To conduct a study into the grocery/stationery store functioning of a Joint Hindu family businesses	Identify and explain the concept, merits and limitations of a Partnership firm. Understand the types of partnership on the basis of duration and on the basis	

				<p>ofliability.</p> <p>State the need for registration of a partnershipfirm.</p> <p>Discuss types of partners– active, sleeping, secret, nominal and partner by estoppel.</p>	
	Hindu Undivided Family Business:Concept		(c) To enquire into the profile of five partnerships firms	Understand the concept of Hindu Undivided FamilyBusiness.	
September	Cooperative Societies- Concept,merits, and limitations.		(d) To study the ideology and working of cooperative societies in the area	Identify and explain the concept, merits and limitations of CooperativeSocieties. Understand the concept of consumers, producers,marketing, farmers, credit and housing co- operatives.	22
	Company - Concept, merits and limitations; Types: Private, Publicand One Person Company – Concept		(e) To study the profiles of any five companies (inclusive of both private and public companies)	Identify and explain the concept, merits and limitations of private and public companies. Understand the meaning of one personcompany. Distinguish between a private company and a publiccompany.	
	Formation of company - stages, important documents to be used information of a company			Highlight the stages in the formation of a company. Discuss the important documents used in the various stages in the formation of a company.	

				Distinguish between the various forms of business organizations.	
<b>October</b>	<b>REVISION AND TERM – I EXAMINATION</b>				15
	Public sector and private sector enterprises – Concept	Related Video		Develop an understanding of Public sector and private sector enterprises	
	Forms of public sector enterprises: Departmental Undertakings, Statutory Corporations and Government Company.		Collect information on companies in the public sector which have been selected for disinvestment in the last 2-3 years. Also examine the controversies surrounding these decisions. Prepare a project report.	Identify and explain the features, merits and limitations of different forms of public sector enterprises	
<b>November</b>	<b>Unit 4: Business Services</b>		<b>Online teaching through Zoom:</b> - Case Studies - PPT - Short Videos <b>test through Google Classroom</b>		20
	Business services – meaning and types. Banking: Types of bank accounts - savings, current, recurring, fixed deposit and multiple option deposit account	Related Video	Identify a list of various services you use on a regular basis and identify their distinct characteristics.	Understand the meaning and types of business services. Discuss the meaning and types of Business service Banking Develop an understanding of difference types of bank account.	

	Banking services with particular reference to Bank Draft, Bank Overdraft, Cash credit. E-Banking meaning, Types of digital Payments			Develop an understanding of the different services provided by banks	
	Insurance – Principles. Types – life, health, fire and marine insurance – concept		Do a project on banking services. and collect information about various facilities offered by them and also collect leaflets about salient features of different schemes. Compile and suggest what extra services you feel the bank should be providing.	Recall the concept of insurance Understand Utmost Good Faith, Insurable Interest, Indemnity, Contribution, Doctrine of Subrogation and Causa Proxima as principles of insurance Discuss the meaning of different types of insurance-life, health, fire, marine insurance	
	<b>Unit 5: Emerging Modes of Business</b>				
	E - business: concept, scope and benefits	Related Video	Study any business unit/company which is using e-commerce, e-business as a way of doing business. Interview some people working there and find out the advantages in practical business in terms of its costs also.	Give the meaning of e-business. Discuss the scope of e-business. Appreciate the benefits of e-business Distinguish e-business from traditional business.	
			Compare and contrast the products and their prices available on the internet and in retail shops. Is the quality, customer satisfaction and		

			other factors the same?		
December	<b>Revision and term 1 examination</b>				22
January	<b>Unit 6: Social Responsibility of Business and Business Ethics</b>		<b>Online teaching through Zoom:</b> - Case Studies - PPT - Short Videos <b>test through Google Classroom</b>		15
	Concept of social responsibility	Related Video	Develop and put in writing a code of ethics for use in the classroom. Your document should include guidelines for students, teachers, and the principal.	State the concept of social responsibility.	
	Case of social responsibility			Examine the case for social responsibility.	
	Responsibility towards owners, investors, consumers, employees, government and community.			Identify the social responsibility towards different interestgroups.	
	Role of business in environmentprotection		Using newspapers, magazines and other business references, identify and describe at least three companies that you think are socially	Appreciate the role of business in environmentprotection.	

			responsible and three that you think are socially irresponsible.		
February	<b>Part B: Finance and Trade</b>  <b>Unit 7: Sources of Business Finance</b>		<b>Online teaching through Zoom:</b> - Case Studies - PPT - Short Videos <b>test through Google Classroom</b>		
	Concept of business finance	Related Video		State the meaning, nature and importance of business finance.	
	Owners' funds- equity shares, preferences share, retained earnings, Global Depository receipt (GDR), American Depository Receipt (ADR) and International Depository Receipt (IDR) – concept		Collect information about the companies that have issued debentures in recent years. Give suggestions to make debentures more popular.	Classify the various sources of funds into owners' funds. State the meaning of owners' funds. Understand the meaning of Global Depository receipts, American Depository Receipts and International Depository Receipts	
	Borrowed funds: debentures and bonds, loan from financial institution and commercial banks, public deposits, trade credit		Institutional financing has gained importance in recent years. In a scrapbook paste detailed information about various financial institutions that provide financial assistance to Indian companies.	State the meaning of borrowed funds. Discuss the concept of debentures, bonds, loans from financial institutions and commercial banks, Trade credit. Distinguish between owners' funds and borrowed funds.	

	<b>Unit 8: Small Business and Enterprises</b>	Related Video			
	Entrepreneurship Development (ED): Concept, Characteristics and Need. Process of Entrepreneurship Development: Start-up India Scheme, ways to fund start-up. Intellectual Property Rights and Entrepreneurship		Prepare a questionnaire to find out the actual problems faced by an owner of a small scale unit. Prepare a project report on it.	Understand the concept of Entrepreneurship Development (ED), Intellectual Property Rights	
	Small scale enterprise as defined by MSMED Act 2006 (Micro, Small and Medium Enterprise Development Act)			Understand the meaning of small business	
	Role of small business in India with special reference to rural areas			Discuss the role of small business in India	
	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		Survey about five small scale units in your vicinity and find out if they have received any assistance by the institutions set up by the Government.	Appreciate the various Government schemes and agencies for development of small scale industries. NSIC and DIC with special reference to rural, backward area.	
	<b>Unit 9: Internal Trade</b>		<b>Online teaching through Zoom:</b> - Case Studies - PPT - Short Videos <b>test through Google Classroom</b>		
	Internal trade - meaning and types services rendered by a wholesaler and a retailer	Related video	Do you know any retailers selling second-hand goods in your area? Find out the category of the product that they deal in ? Which products are suitable for resale?	State the meaning and types of internal trade. Appreciate the services of wholesalers and retailers.	

			List some of your findings. What conclusions do you draw?		
	Large scale retailers-Departmental stores, chain stores - concept		From your own experience, compare the features of two retail stores selling the same product. For example, the same products being sold at a small scale retailer like a general store and in a big store like a departmental store. What similarities and differences can you identify in terms of price, service, variety, convenience, etc.	Highlight the distinctive features of departmental stores, chain stores and mail order business.	
	<b>Unit 10: International Trade</b>				
	International trade: concept and benefits	Related Video		Understand the concept of international trade. Describe the scope of international trade to the nation and business firms.	
February	<b>Revision and term II examination</b>				<b>20</b>

## Entrepreneurship (066)

MONTH	UNIT/TOPIC	METHODOLOGY/ACTIVITIES	LEARNING OUTCOME	WORKING DAYS
July	<b>Unit 1:</b> <b>Entrepreneurship: Concept and Functions</b>  Competencies- Vision, Decision making, Logical, Critical and Analytical Thinking	<b>Practical – Operational Teaching Learning Methods:</b> <b>Interactive Teaching Learning Methods</b>  <b>Online teaching through zoom:</b> - PPT - Short videos - Case studies - Test through google classroom	Understand the myths of entrepreneurship Awareness of advantages and disadvantages Of entrepreneurship Myths of entrepreneurship Functions of entrepreneurship Understanding of process of entrepreneurship Describe the current scenario of entrepreneurial activity in India.	19
August	<b>Unit 2 :</b> An entrepreneur: Competencies: Need achievement, Motivation, Ethics, opportunity seeking, passion, Independence	<b>Direct Teaching Learning Methods:</b> - Watching Official speech - Networking - Mentoring <b>Online teaching through zoom:</b> - PPT - Short videos - Case studies	Understand the motivation to become an entrepreneur Differentiate between various types of entrepreneurs Explain the entrepreneurial competencies Differentiate between entrepreneur and intrapreneur.	18
September	<b>Unit 3:</b> <b>Entrepreneurship journey: Competencies :</b> Scanning the environment; Information seeking; creativity; innovativeness divergent thinking; Perseverance	<b>Practical – Operational Teaching Learning Methods:</b> - Role Playing - Practical Experience <b>Online teaching through zoom:</b> - PPT - Short videos - Case studies - Test through google classroom	Understanding of idea generation Discuss the concept of type of feasibility study Draft basic business plan	22
October	<b>REVISION AND TERM – I EXAMINATION</b>			15

	<p><b>Revision:-</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Unit-1 Entrepreneurship</li> </ul> <p><b>Unit 2: An Entrepreneur</b></p>	<p><b>Interactive Teaching Learning Methods</b></p> <p>Discussion</p> <p><b>Online teaching through zoom:</b></p> <ul style="list-style-type: none"> <li>-PPT</li> <li>-Short videos</li> <li>-Case studies</li> </ul>	<ul style="list-style-type: none"> <li>• Recall of topics</li> </ul> <p><b><u>Discussed in unit -1 and unit -2</u></b></p>	
November	<p><b>Unit 4:</b> Entrepreneurship as innovation and problemsolving Competencies: Risk taking:Determination; initiative; problem solving ability; Adaptability to changing technologies.</p>	<p><b>Practical – Operational Teaching Learning Methods:</b></p> <ul style="list-style-type: none"> <li>- Learn investing</li> <li>- Video watching</li> </ul> <p><b>Online teaching through zoom:</b></p> <ul style="list-style-type: none"> <li>-PPT</li> <li>-Short videos</li> <li>-Case studies</li> <li>- Test through google classroom</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the role of entrepreneurs as problem solvers</li> <li>• Appreciate the role of global and Indian innovations in entrepreneurial ventures.</li> <li>• Understand the use of technology and digitalization for new business.</li> </ul>	20
December	<p><b>Revision:-</b> <b>TERM 1 EXAMINAION</b></p>	<p><b>Interactive Teaching Learning Methods</b></p> <ul style="list-style-type: none"> <li>- Discussion</li> <li>- Doubts</li> </ul>	<ul style="list-style-type: none"> <li>• <b><u>Recall of topics of unit 3 and unit 5</u></b></li> </ul>	22
January	<p><b>Unit 5: Understanding the market</b></p>	<p><b>Practical – Operational Teaching Learning Methods:</b></p> <ul style="list-style-type: none"> <li>- Class Practice</li> <li>- Learning from mistakes</li> </ul> <p><b>Online teaching through zoom:</b></p> <ul style="list-style-type: none"> <li>-PPT</li> <li>-Short videos</li> <li>-Case studies</li> <li>- Test through google classroom</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the elements of marketing mix</li> <li>• Scan the market environment</li> </ul>	15
	<p><b>Unit 6 ; Business finance and arithmetic</b> Unit of Sale Types of cost Break even analysis</p>	<p><b>Interactive Teaching Learning Methods</b></p> <ul style="list-style-type: none"> <li>- Discussion</li> <li>- Doubts</li> </ul> <p><b>Online teaching</b></p>	<p>Discuss unit cost, unit of sale, unit price of a product or a product or service</p>	
February	<b>REVISION AND FINAL TERM EXAMINATION</b>			20

## **Mathematics (041)**

MONTH	UNIT/TOPIC	METHODOLOGY/ ACTIVITIES	LEARNING OUTCOME	WORK ING DAYS
July	<p><b>SETS :</b>  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.  Difference of sets. Complement of a set.  Properties of Complement Sets.</p> <p><b>Relation and Function</b>  Ordered pairs, Cartesian product of sets. Number of elements in the cartesian product of two finite sets.  Cartesian product of the set of reals with itself (upto <math>R \times R \times R</math>). 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. Sum, difference, product and quotient of functions.</p>	To find the number of subsets of a given sets and verify that if a set has $n$ number of elements, then the total no of subsets is $2^n$ .  To verify that for two sets $A$ and $B$ , $n(A \times B) = pq$ and the total number of relations from $A$ to $B$ is $2^{pq}$ , where $n(A) = p$ and $n(B) = q$ . To distinguish between a relation and a function. Video Link: <a href="https://www.youtube.com/watch">https://www.youtube.com/watch</a>	Students are able to solve the questions of Sets.	19
August	<p><b>Trigonometry</b>  Positive and negative angles. Measuring angles in radians and in degrees and conversion by induction, motivating the application of the method by looking at natural numbers as the least inductive subset of real numbers from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity <math>\sin^2 x + \cos^2 x = 1</math>, for all <math>x</math>. Signs of trigonometric functions.  Domain and range of trigonometric functions and their graphs. Expressing <math>\sin(x \pm y)</math> and <math>\cos(x \pm y)</math> in terms of <math>\sin x</math>, <math>\cos x</math>, <math>\sin y</math>, <math>\cos y</math> and their simple applications</p>	To prepare a model to illustrate the values of sine function and cosine function for different angles which are multiples of $\pi$ and	Students are able to solve the questions of Trigonometry	18

September	<b>Trigonometry (General &amp; Principle Solutions)</b> <b>Principle of mathematical induction :</b>		Students will be able to find the general and principle solutions of trigonometric functions.	22
	Process of the proof. The principle of mathematical induction and simple applications.		Students are able to solve the questions of Principle of mathematical induction.	
	<p><b>Complex Number</b> Need for complex numbers, especially <math>\sqrt{-1}</math>, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers.</p> <p>Argand plane and polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equations (with real coefficients) in the complex number system.</p> <p><b>Linear Inequality:</b> Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line. Graphical solutions of linear inequalities in two variables. Graphical method of finding a solution of system of linear inequalities in two variables.</p> <p><b>Permutation and combination :</b> Fundamental principle of counting. Factorial <math>n</math>. (<math>n!</math>) Permutations and combinations, explanation of concept of formulae for and and their connections, simple applications</p>	To interpret geometrically the meaning of $i = \sqrt{-1}$ and its integral powers .	Students are able to solve the questions of Complex Number	
October	<b>REVISION AND TERM – I EXAMINATION</b>			15

November	<p><b>Limits and derivative:</b> Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to scope of tangent of the curve, Derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.</p>	<p><b>ART INTEGRAED LEARNINGACTIVITY :</b> <b>Verification of the geometricalsignificance of derivative.</b></p> <p>—</p>	<p>Students are able to solve the questions of limits and Derivatives</p>	20
December	<p><b>Sequence and Series :</b> Sequence and Series. Arithmetic Progression (A. P.). Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of first <math>n</math> terms of a G.P., infinite G.P. and its sum, Geometric mean (G.M.), relation between A.M. and G.M.</p>	<p>To obtain formula for the sum of squares of first <math>n</math> natural numbers.</p>	<p>Students are able to solve the questions of Sequence and Series.</p>	22
January	<p><b>Straight line:</b> Brief recall of two dimensional geometry from earlier classes. Shifting of origin. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point-slope form, slope-intercept form, two-point form, intercept form and normal form. General equation of a line. Equation of family of lines passing through the point of intersection of two lines. Distance of a point from a line.</p>		<p>Students are able to solve the questions of Straight Line</p>	15
	<p><b>Conic Section</b> Sections of a cone: circle, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.</p>	<p>To construct different type of conic sections</p>	<p>Students are able to solve the questions of Conic Sections</p>	
	<p><b>Introduction to Three -dimensional Geometry</b> Axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula</p>	<p>To explain the concept of octants by three mutually perpendicular planes in space</p>	<p>Students are able to solve the questions of Introduction to Three-dimensional Geometry</p>	

<p><b>Statistics</b> Measures of dispersion: Range, mean deviation, variance and standard deviation of ungrouped/grouped data.</p>		<p>Students are able to solve the questions of Statistics</p>	
<p><b>Probability</b> Random experiments; outcomes, sample spaces (set representation). Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories studied in earlier classes.  Probability of an event, probability of 'not', 'and' and 'or' events</p>	<p>To write the sample space when a coin is tossed once, two times, three times, four times</p>	<p>Students are able to solve the questions of Probability</p>	

February

**REVISION ( FINAL EXAMINATION)**

20

## **Physical Education (048)**

MONTH	UNIT/TOPIC	METHODOLOGY/ ACTIVITIES	LEARNING OUTCOME	WORKING DAYS
July	Changing Trends & Career in Physical Education-	Online Teaching Method :  : PPT Presentation : Through Related Video : Test on Google Class room.  Activity- Find out the possible career opportunity in your city in the field of physical education.	Student will learn about the following- <input type="checkbox"/> Meaning & definition of Physical Education <input type="checkbox"/> Aims & Objectives of Physical Education <input type="checkbox"/> Career Options in Physical Education <input type="checkbox"/> Competitions in various sports at national and international level <input type="checkbox"/> Khelo-India Program	19
August	Olympic Value Education-	Online Teaching Method :  : PPT Presentation : Through Related Video : Test on Google Class room.  Activity- Find out the latest Olympic records and Medals in following games- Athletics, Basketball, Football, Wrestling and Swimming.	Student will learn about the following- <input type="checkbox"/> Olympics, Paralympics and Special Olympics <input type="checkbox"/> Olympic Symbols, Ideals, Objectives & Values of Olympism <input type="checkbox"/> International Olympic Committee <input type="checkbox"/> Indian Olympic Association	18
September	Physical Fitness, Wellness & Lifestyle- Physical Education & Sports for CWSN (Children With Special Needs- Divyang)-	Online Teaching Method :  : PPT Presentation : Through Related Video : Test on Google Class room.  Activity- Find out the various component of physical fitness in daily routine activities. Online Teaching Method :  : PPT Presentation : Through Related Video : Test on Google Class room.  Activity- List down the need and idea's for your school to provide the inclusive education to children with special need.	Student will learn about the following- <input type="checkbox"/> Meaning & Importance of Physical Fitness, Wellness & Lifestyle <input type="checkbox"/> Components of physical fitness and Wellness <input type="checkbox"/> Components of Health related fitness Student will learn about the following- <input type="checkbox"/> Aims & objectives of Adaptive Physical Education <input type="checkbox"/> Organization promoting Adaptive Sports (Special Olympics Bharat; Paralympics; Deaflympics) <input type="checkbox"/> Concept of Inclusion, its need and Implementation <input type="checkbox"/> Role of various professionals for children with special needs (Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & special Educator)	22
October	<b>FIRST TERM EXAMINATION</b>			15
November	Physical Activity &	Online Teaching Method :	Student will learn about the following-	20

	Leadership Training-	: PPT Presentation : Through Related Video : Test on Google Class room.  Activity- Give your views on the organisation of adventure sports in your school.(how can you use the school space for adventure games?)	<input type="checkbox"/> Leadership Qualities & Role of a Leader <input type="checkbox"/> Creating leaders through Physical Education <input type="checkbox"/> Meaning, objectives & types of Adventure Sports (Rock Climbing, Tracking, River Rafting, Mountaineering, Surfing and Para Gliding) <input type="checkbox"/> Safety measures to prevent sports injuries.	
December				22
January	Test, Measurement & Evaluation-	Online Teaching Method :  : PPT Presentation : Through Related Video : Test on Google Class room.  Activity- Calculation of BMI and Body Types.	Student will learn about the following- <input type="checkbox"/> Define Test, Measurement & Evaluation <input type="checkbox"/> Importance of Test, Measurement & Evaluation In Sports <input type="checkbox"/> Calculation of BMI & Waist - Hip Ratio <input type="checkbox"/> Somato Types (Endomorphy, Mesomorphy & Ectomorphy) <input type="checkbox"/> Measurement of health related fitness	15
	Yoga-	Online Teaching and demonstration Method  : PPT Presentation : Through Related Video : Test on Google Class room.  Activity- Practice of different Asanas, Pranayama and Yog nindra.	Student will learn about the following- <input type="checkbox"/> Meaning & Importance of Yoga <input type="checkbox"/> Elements of Yoga <input type="checkbox"/> Introduction - Asanas, Pranayam, Meditation & Yogic Kriyas <input type="checkbox"/> Yoga for concentration & related Asanas (Sukhasana; Tadasana; Padmasana & Shashankasana, Naukasana, Vrikshasana (Tree pose), Garudasana (Eagle pose) <input type="checkbox"/> Relaxation Techniques for improving concentration – Yog-nidra.	
	Fundamentals of Anatomy, Physiology & Kinesiology in Sports-	Online Teaching Method :  : PPT Presentation : Through Related Video : Test on Google Class room.  Activity- Effect of exercise on different physiological system.	Student will learn about the following- <input type="checkbox"/> Definition and Importance of Anatomy, Physiology & Kinesiology <input type="checkbox"/> Function of Skeleton System, Classification of Bones & Types of Joints <input type="checkbox"/> Properties and Functions of Muscles <input type="checkbox"/> Function & Structure of Respiratory System and Circulatory System <input type="checkbox"/> Equilibrium – Dynamic & Static And Centre of Gravity and its application in sports.	
	Psychology & Sports-	Online Teaching Method :  : PPT Presentation	Student will learn about the following- <input type="checkbox"/> Definition & Importance of Psychology in Phy. Edu. & Sports	

		<p>: Through Related Video        : Test on Google Class room.</p> <p>Activity- Find out the different Physical activities for the different stages of development.</p>	<input type="checkbox"/> Define & Differentiate Between Growth & Development <input type="checkbox"/> Developmental Characteristics At Different Stages of Development <input type="checkbox"/> Adolescent Problems & Their Management.	
	Training and Doping in Sports-	<p>Online Teaching Method :</p> <p>: PPT Presentation        : Through Related Video        : Test on Google Class room.</p> <p>Activity- Discussion of the various Prohibited substances and their short term and long term effect on athlete's body.</p>	Student will learn about the following- <ul style="list-style-type: none"> <li><input type="checkbox"/> Meaning &amp; Concept of Sports Training</li> <li><input type="checkbox"/> Principles of Sports Training</li> <li><input type="checkbox"/> Warming up &amp; limbering down</li> <li><input type="checkbox"/> Skill, Technique &amp; Style</li> <li><input type="checkbox"/> Concept &amp; classification of doping</li> <li><input type="checkbox"/> Prohibited Substances &amp; their side effects.</li> </ul>	
February	<b>REVISION AND FINAL TERM EXAMINATION</b>			20

## **Computer Science (PYTHON) (083)**

MONTH	UNIT/TOPIC	METHODOLOGY/ ACTIVITIES	LEARNING OUTCOME	WORKING DAYS
July	Societal Impact	Article Writing on Societal Impact of IT explaining Digital footprints, society & Netizen, Data Protection, cyber crime etc.	Students learn the Importance of IT and its Impact in our daily life.	19
August	Societal Impact	Online Test On Societal Impact.		18
September	Computer System	Draw a Memory chart in MS-Word with conversion of memory from one unit to another.	Student recognized the parts, understand their uses in computer system	22
October	<b>REVISION AND TERM – I EXAMINATION</b>			15
November	Encoding Schemes and Number System,	Draw a Number System chart in MS-Word with conversion of one system to another like Decimal to Binary, Binary to Decimal etc.	Student will learn the use of Number system in Computer System & they will learn to convert one number type to another. Students will learn about Artificial Intelligence, Cloud Computing, Blockchains. They will also learn about their Importance and drawbacks (if any).	20
	Emerging Trends	Making a Report on AI, Cloud Computing and other IT terms.		
December	Computer System	Draw a CPU diagram in MS-Word and explaining all the parts of computer.		22
January	Introduction to Problem Solving	Writing of Algorithms to understand program. Making Flow charts of various programs.	Student will learn to make algorithms and flowcharts for making program easier.	15
	Getting Started with Python	Making a Program using Identifiers, Variables, Comments, Data types etc.	Student will learn about all necessary terms of python platform like indentation, variables, datatypes etc.	20
	Flow of Control	Making a Program using IF, IF Else, Loops with nesting of loops, Break & Continue statement.	Student will learn about Conditions and looping in python.	

	Functions Strings	Making a Program on Functions Like Swapping of numbers.  Making a Program on Strings. Like Reverse of string.	Student will learn about using of functions & strings in Python to make code easier.	
	Lists Tuples & Dictionaries	Making a Program using list operations like traversing of list, nested list, copying of list and list as an argument to function in program.  Making a Program using tuple, built-in-functions, their handling.  Making a Program using dictionary and their operation in python.	Student will learn about using of lists and their importance in Python.  Student will learn about using of Tuples, dictionaries and their importance in Python. Project Making on Python to developed an Application to the Ministry of IT of UP, Arunachal & Mizoram.	
February	<b>REVISION AND FINAL TERM EXAMINATION</b>			20

## History

MONTH	UNIT/TOPIC	METHODOLOGY/ACTIVITY	LEARNING OUTCOME	WORKING DAYS
July	<b>WORLD HISTORY</b> 2.Writing and City Life Focus: Iraq, 3rd millennium BCE a) Growth of towns b) Nature of early urban societies c) Historians' Debate  on uses of writing	<p>Familiarize the learner with the nature of early urban Centres. Discuss whether writing is significant as a marker of civilization. aspects of civilization in order to understand the connection between city life and culture of contemporary civilizations.</p> <ul style="list-style-type: none"> <li>Analyze the outcomes of a sustained tradition of writing.</li> </ul>	<p>Familiarize the learner with the nature of early urban Centres. Discuss whether writing is significant as a marker of civilization.</p>	19
August	<b>SECTION II : EMPIRES</b> Introduction 3.An Empire across Three Continents Focus: Roman Empire, 27 BCE to 600 CE Political evolution Economic Expansion Religion-culture foundation Late Antiquity Historians' view on the Institution of Slavery	<p>At the completion of this unit students will be able to:</p> <ul style="list-style-type: none"> <li>Explain and relate the dynamics of the Roman Empire in order to understand their polity, economy, society and culture. Analyze the implications of Roman's contacts with the subcontinent Empires Examine the domains of cultural transformation in that period</li> </ul>	<p>Familiarize the learner with the history of a major world empire Discuss whether slavery was a significant element in the economy.</p>	18
September	4.Central Islamic Lands Focus: 7th to 12th centuries Polity Economy Culture Historians' viewpoints on the nature of the crusades	<p>At the completion of this unit students will be able to:</p> <ul style="list-style-type: none"> <li>Explain the relationship between livelihood patterns and the geographical condition of the area inhabited by the tribes and the nomadic pastoralists</li> <li>Describe the arenas of Islam in reference to its emergence, rise of Caliphate and Empirebuilding.</li> <li>Analyze the causes, events and effects of Crusades. Examine their economic life in order to understand their connectivity with various continents.</li> </ul> <p>Comprehend their learning and cultural developments in varied fields like astronomy, medicine, architecture, sufism, etc.</p>	<p>Familiarize the learner with the rise of Islamic empires in the Afro-Asian territories and its implications for economy and society. Understand what the crusades meant in these regions and how they were experienced.</p>	22

	<b>SECTION -III: CHANGING TRADITIONS</b> Introduction6.The Three Orders. Focus: Western Europe 13th-16th century a) Feudal society and economy	At the completion of this unit students will be able to: <ul style="list-style-type: none"> <li>Explain the myriad aspects of feudalism with special reference to first, second, third and fourth order of the society.</li> </ul>	Familiarize the learner with the nature of the economy and society of this period and the changes within them.	
October	<b>REVISION AND TERM – I EXAMINATION</b>			15
	b) Formation of state c) Church and society d) Historians' views on decline of feudalism	<ul style="list-style-type: none"> <li>Relate between ancient slavery and serfdom</li> <li>Assess the 14th century crisis and rise of the nation states.</li> </ul>	Show how the debate on the decline of feudalism helps in understanding processes of transition.	
November	7.Changing Cultural Traditions Focus: Europe 14th-17 <sup>th</sup> century a) New ideas and new trends in literature and arts b) Relationship with earlier ideas c) The contribution of West Asia d) Historians' viewpoint on the validity of the notion 'European Renaissance'	<p>At the completion of this unit students will be able to</p> <ul style="list-style-type: none"> <li>Analyze the causes, events, and effects of the Renaissance, Reformation, Scientific Revolution, and Age of Exploration.</li> <li>Relate the different facets of Italian cities to understand the characteristics of Renaissance Humanism and Realism.</li> <li>Compare and contrast the condition of women in the Renaissance period. Recognize major influences on the architectural, artistic, and literary developments in order to understand the facades of Renaissance.</li> <li>Analysis on the approach of Martin Luther and Erasmus towards the Roman Catholic Church and its impact on later reforms.</li> <li>Evaluate the Catholic Church's response to the Protestant Reformation in the form of the Counter Reformation.</li> </ul>	Explore the intellectual trends in the period. Familiarize students with the paintings and buildings of the period. Introduce the debate around the idea of 'Renaissance'.	20
December	<b>SECTION -III: CHANGING TRADITIONS</b> Introduction6.The Three Orders. Focus: Western Europe 13th-16th century a) Feudal society and economy	At the completion of this unit students will be able to: <ul style="list-style-type: none"> <li>Explain the myriad aspects of feudalism with special reference to first, second, third and fourth order of the society.</li> </ul>	Familiarize the learner with the nature of the economy and society of this period and the changes within them.	22

January	<p><b>SECTION –IV TOWARDS MODERNISATION</b></p> <p>Introduction</p> <p>9.The Industrial Revolution</p> <p>Focus: England 18th to 19<sup>th</sup> century Innovations and Technological change Patterns of growth Emergence of a working class Historians' viewpoint, Debate on 'Was there an Industrial Revolution?'</p>	<p>At the completion of this unit students will be able to</p> <ul style="list-style-type: none"> <li>• Comprehend the arenas of the Industrial Revolution in Great Britain and other countries</li> <li>• Elucidate the technological innovations that spurred industrialization in Britain.</li> <li>• Analyze the social, economic, and environmental impact of the Industrial Revolution in order to understand the revolutionary and ideological transformation. Compare and contrast the positive and negative aspects of Industrial Revolution.</li> <li>• Empathize for the suffering of the workers during the Industrial Revolution.</li> </ul>	<p>Understand the nature of growth in the period and its limits.</p> <p>Initiate students to the debate on the idea of industrial revolution.</p>	15
	<p>10. Displacing Indigenous People</p> <p>Focus: North America and</p>	<p>At the completion of this unit students will be able to</p>	<p>Sensitize students to the processes</p>	
	<p>Australia, 18th to 20<sup>th</sup> Century</p> <p>a) European colonists in North America and Australia</p> <p>b) Formation of White Settler societies</p> <p>c) Displacement and repression of local people</p> <p>d) Historians' viewpoint on the impact of European settlement on indigenous population</p>	<p>• Recount some aspects of the history of the native people of America to understand their condition.</p> <p>To analyze the realms of settlement of Europeans in Australia and America. Compare and contrast the lives and roles of indigenous people in these continents</p>	<p>of displacements that accompanied the development of America and Australia.</p> <p>Understand the implications of such processes for the displaced populations.</p>	

	<p><b>11. Paths to Modernization</b>  <b>Focus:</b> East Asia, late 19<sup>th</sup> to 20th century            a) Militarization and economic growth in Japan            b) China and the communist alternative            c) Historians' Debate on the meaning of modernization</p>	<p>At the completion of this unit students will be able to</p> <ul style="list-style-type: none"> <li>• Deduce the histories of China and Japan from the phase of imperialism to modernization</li> <li>• Explore the Japanese political, cultural and economic system prior to and after the Meiji Restoration.</li> <li>• Analyze the domains of Japanese nationalism prior and after the Second World War.</li> <li>Comprehend the history of China from colonization to era of socialism.</li> <li>• Summarize the nationalist upsurge in China from Dr Sun Yet Sen to Mao Ze Dong to understand the era of communism.</li> <li>• To analyze the Chinese path to modernization under Deng Xiaoping and Zhou en Lai in order to understand the transformation from rigid communism to liberal socialism.</li> </ul>	<p>Make students aware that transformation in the modern world takes many different forms.</p> <p>Show how notions like 'modernization' need to be critically assessed.</p>	
	MAP WORK ON UNITS 1-11 REVISION	REVISION	REVISION	
February	TERM EXAM II			20

## **Political Science**

MONTH	UNIT/TOPIC	LEARNING OUTCOME	METHODOLOGY/ACTIVITY	Working days
JULY	chapter -1 Constitution Chpter-3 Election and Representation	Students would be able to understand the need for a constitution Students would be able to understand the role and functions Prime Ministers and Council of Ministers.	Activity- Frame yourself Constitution for your school .  Activity- Make a power point presentation on elections in India	19
AUGUST	chapter - 4 Executive	Students would be able to examine the different types of Executive.	Activity - Role play	18
SEPTEMBER	chapter -5 Legislature	Students would be able to explain functions and powers of the Parliament: legislative functions, control over executive	Activity- Mock parliament	22
OCTOBER	<b>REVISION AND TERM – I EXAMINATION</b>			15
NOVEMBER	Book -2 Political Theory Chapter-1 An introduction to political Theory  Chapter-2 Freedom	Students would be able to explain the scope of Political Theory.  Students would be able to understand the link between Positive and negative freedom.	Activity- Write about Nelson Mandela and Aun San syui ki and their contribution in achieving freedom.	20
DECEMBER	Chapter -6 Judiciary	Students would be able to analyze Judicial Activism from the late 1980s	Activity- Make one hypothetical criminal case and one civil case.	22
JANUARY	Chapter -3 Equality	Students would be able to understand the link between Equality and Affirmative Action.	Activity- Art integrated activity Make a e- poster showing freedom or any type of Equality.	15
	Chapter -4 Justice	Students would be able to evaluate Ambedkar on Social Justice.	Activity- Presentation as motivational speaker on any social / political/ religious issue .	
	December Chapter -5 Rights	Students would be able to explain the scope of different dimensions of rights.	Activity- Make power point presentation on any one right including current examples / news showings violation of the right .	
	Chapter -6 Development	Students would be able to assess the various models of development.	Activity - Write the recent developmental policies of the Modi Government	
FEBRUARY	<b>REVISION AND TERM – I EXAMINATION</b>			20

