



**TAGORE INTERNATIONAL SCHOOL**  
**EAST OF KAILASH, NEW DELHI**  
**CLASS XII**  
**SCIENCE**

**PARENT SYLLABUS (2022-23)**  
**MARCH - DECEMBER**  
**ENGLISH CORE**

MONTH	TOPICS/NO. OF PERIODS	LEARNING OUTCOMES	ACTIVITY	ASSESSMENT
March	The Last Lesson by Alphonse Daudet	<p>Each student will be able to</p> <p>develop optimistic attitude towards life amidst many struggles.</p> <p>learn about Alphonse Daudet / history of France.</p> <p>make connections between similar situations in different storylines /life experience, such as Indians under British imperialism.</p> <p>speak about the importance of the mother tongue</p> <p>justify the title</p> <p>list down the ill effects of procrastination</p> <p>answer short and long answers</p> <p>write character sketches</p> <p>improve upon their reading and writing skills</p>	<p>Students will do the following:</p> <p>1. Write a speech on: Political enslavement is a curse on any nation as it deprives it of its identity</p> <p>2. Notice writing: announcing the discontinuation of the French language and the introduction of German language in your school</p> <p>3. <b>Art Integrated Activity:</b> Create a poster announcing the teaching of German, which Franz may have seen on the bulletin board and compare with the one that was put up on the notice board that day.</p> <p>.</p>	<p>Students will be assessed through:</p> <p>Short Revision test through Google forms</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p>

March	My Mother at Sixty-six by Kamala Das	<p><b>Each student will be able to</b></p> <p>list down reasons as to why the youth today should take care of their elderly parents</p> <p>read the poem with proper tone and rhyme and develop an interest in poetry</p> <p>comment on the theme and bring out message in the poem.</p> <p>analyze the poem and identify the poetic devices</p> <p>strengthen their bond with their mother</p> <p>strengthen their vocabulary</p> <p>improve upon their reading and writing skills</p>	<p><b>Students will do the following:</b></p> <ol style="list-style-type: none"> <li>1. Write a letter as the mother, telling the daughter why she must not dwell on her personal fears.</li> <li>2. Construct an exchange of four dialogues between yourself and the poet where the latter confides in you about her fears and asks for your advice. What would your advice be, to face her fears, to ignore them or something else?</li> </ol> <p><b>3. Art Integrated Activity:</b></p> <p>Compose a short poem celebrating Mothers Day/create a poem or a song on the thought of the loss of their dear one and compare it with My Mother at Sixty-six</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision test through Google forms</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p>
March	Short Writing Skill: Notice Writing	<p><b>Each student will be able to</b></p> <p>state situations when they would draft a notice</p> <p>give inputs on the format, style and tone of a notice</p> <p>draft a notice answering the questions what, when, where and how</p> <p>express their views through a notice using grammatically correct</p>	<p><b>Students will do the following:</b></p> <ol style="list-style-type: none"> <li>1. Draft a notice announcing the celebration of Earth Day on 22 April.</li> <li>2. Draft a notice disseminating information about details of events to be held during the Book Week in the school.</li> <li>3. Write a notice for your school notice board as the Cultural Secretary of your</li> </ol>	<p><b>Students will be assessed through:</b></p> <p>Class and home assignments</p>

		sentences. improve upon their writing skills	school, announcing the Investiture Ceremony of the newly appointed members of the Students' Council. to be organized in the school premises. Invent other details such as the Chief Guest, timings, date, schedule, etc.	
MONTH	TOPICS/NO. OF PERIODS	LEARNING OUTCOMES	ACTIVITY	ASSESSMENT
April	Lost Spring by Anees Jung	<p><b>Each student will be able to</b></p> <p>sensitise themselves with the problem of child labour.</p> <p>identify the problem, consider the options, weigh the pros and cons of each option, and reach a decision/ opinion/solution.</p> <p>enhance their analytical skills.</p> <p>uncover the motives of the poor.</p> <p>express themselves through writing tasks</p> <p>improve upon their reading and writing skills</p>	<p><b>Students will do the following:</b></p> <p>1. Report Writing: Problem of Child Labour in India, for their school magazine. after viewing the e-project, Shape our Future Bright and the documentary on child labour.</p> <p>2. Notice Writing: informing students about the 'Anti-Child-Labour Day', to be observed in their school, as the Head Boy/Girl.</p> <p><b>3. Art Integrated Activity:</b> Design a poster to create awareness about the upliftment of Seemapuri, a slum in the periphery of Delhi.</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision Test through Google forms</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p>
April	Long Writing Skill: Report Writing	<p><b>Each student will be able to</b></p> <p>generate ideas and organize them in groups</p> <p>draft a report as per the format, with appropriate expressions and content.</p>	<p><b>Students will do the following:</b></p> <p>1. You are Shekhar/Tripta a student of A.P Public School. Principals of two schools from Pakistan visited your school as a part of cultural exchange programme. Students of the school put up a cultural show in their honour. Write a report about it for your school magazine in about 120-150 words..</p>	<p><b>Students will be assessed through:</b></p> <p><b>WEEKLY TEST 1 - 29.4.22</b></p> <p>Class and home assignments</p>

			2. You are Ramesh / Reema, a staff reporter of The Times of India. You witnessed a road accident involving a truck and a Maruti van in Karol Bagh. Write a report covering the incident in not more than 120-150 words.	
April	The Third Level by Jack Finney	<p><b>Each student will be able to</b></p> <p>list down their ideas on the concept of time travel</p> <p>analyze Jack Finney's word choices</p> <p>analyze the text structure of The Third Level</p> <p>determine the meaning of words and phrases as used in the lesson</p> <p>bring out the irony in the lesson</p> <p>express themselves through writing tasks</p> <p>write character sketches</p>	<p><b>Students will do the following:</b></p> <p>1. Imagine that you come across Louisa's diary. What might you find in it about the third level? Write an article based on any one of the events from the story, The Third Level.</p> <p><b>2. Art Integrated Activity:</b> You have read about Charley's travels from the present to 1894 in, The Third Level. Now, you will create a project that includes narrative writing to describe the chain of events that happened to Charley, starting when he walked into Grand Central Station. You may create a video journal, a power point presentation, an investigating case file, etc</p>	<p><b>Students will be assessed through:</b></p> <p>Short revision test through Google forms</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p>
MONTH	TOPICS/NO. OF PERIODS	LEARNING OUTCOMES	ACTIVITY	ASSESSMENT
May	Long Writing Skill: Article Writing	<p><b>Each student will be able to</b></p> <p>generate ideas and organize them in groups</p> <p>write an article as per the format with appropriate expressions and content.</p>	<p><b>Students will do the following:</b></p> <p>1. Increase in the number of vehicles causes pollution and traffic jams. Write an article in 120-150 words for, 'The New Indian Express', Delhi, highlighting the urgent need to solve these man-made problems, giving suitable suggestions. You are Madhav/ Madhuri</p>	<p><b>Students will be assessed through:</b></p> <p>Class and home assignments</p>

			<p>2. India is standing at the threshold of joining the developed nations but that is not possible till we achieve complete literacy in the country. The contribution of students may be very significant in achieving our goals. Write an article in 120-150 words on, The Role of the Students in Removing Illiteracy.</p>	
May	Deep Water by William Douglas	<p><b>Each student will be able to</b></p> <p>interpret the title</p> <p>identify at least 4-5 character traits of William Douglas</p> <p>list down the values of hard work and determination</p> <p>create at least a set of three dialogues between Douglas and his instructor</p> <p>prepare oneself for crisis management</p> <p>strengthen one's decision making skills.</p> <p>enrich one's vocabulary</p> <p>write relevant answers to HOTS and value based questions from the lesson</p>	<p><b>Students will do the following:</b></p> <p><b>1. Art Integrated Activity:</b> Create a set of dialogues with four exchanges between William Douglas and his instructor discussing Douglas' fear of water and the instructor's help in removing the fear from his life</p> <p>2. Write a paragraph of about 120 words recounting any fear you had in life. Try to recollect details of what caused the fear in you, your feelings, the encouragement you got from others, or the criticisms. You could begin with the last sentence of the essay, Deep Water. "At last I felt released, free to walk the trails and climb the peaks and to brush aside fear."</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision test through Google forms</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p>
May	Writing Skill: Letter to the Editor	<p><b>Each student will be able to</b></p> <p>state situations when they would write letters to the editor</p>	<p><b>Students will do the following:</b></p> <p>1. You are Kavita/ Kailash staying at B-101, Yamuna Vihar, Delhi. You find it disturbing that despite a ban on the use</p>	<p><b>Students will be assessed through:</b></p> <p>Class and home assignments</p>

		<p>provide inputs on the format and style and tone of a letter to the editor</p> <p>draft a formal letter to the editor of a local or national daily dealing with civic or social problems</p> <p>express their views through a letter using grammatically correct sentences.</p>	<p>of polythene bags its use is rampant in city. Write a letter to the editor of a national daily expressing your concern about apathy of people towards environmental degradation. Also suggest ways to mobilise city dwellers for the cause of safe environment with the help of school children.</p> <p>2. You attended a career rganized programme organized by Career India. You had the opportunity of listening to professionals from various fields like food, technology, fashion technology and media management. Write a letter to the editor of a local newspaper suggesting that such programmes should be arranged in Govt. Sr. Sec. Schools. You are Sakshi/Saksham, student of Class XII.</p>	
MONTH	TOPICS/NO. OF PERIODS	LEARNING OUTCOMES	ACTIVITY	ASSESSMENT
July	A Thing of Beauty by John Keats	<p>Every student will be able to</p> <p>analyse the poem to make a critical appreciation</p> <p>identify the poetic devices and explain how they are used in the poem</p> <p>annotate the lines of the poem with reference to the context</p> <p>bring out beauty in every creation of God, whether big or small</p>	<p>Students will do the following:</p> <p>1. <b>Art Integrated Activity:</b></p> <p>All Things Bright and Beautiful</p> <p>Beauty is a heavenly tonic/drink – an endless fountain of nectar. This beauty comes in different forms– a tale, a poem, a play, a lovely object of nature or the heavenly bodies. It soothes our spirits and gives us good health, sound sleep and mental peace. It removes sadness from our lives and gives an everlasting</p>	<p>Students will be assessed through:</p> <p><b>WEEKLY TEST 2 - 8.7.22</b></p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p>

			<p>joy. Keeping te central idea of the poem in mind, specify an art form that soothes your spirit and refreshes your mind. Create that art work and mention why it is a source of happiness to you.</p> <p><b>Examples:</b> Composing a song, poem/singing a song/ playing a musical instrument/ painting/ sketching/reading/creating a shape poetry/dancing, etc.</p>	
July	<b>The Tiger King by Kalki</b>	<p><b>Every student will be able to</b></p> <p>acquire the knowledge of plot, events</p> <p>interpret the title</p> <p>bring out the theme of the lesson-destiny is all powerful and inevitable</p> <p>connect between crime and punishment.</p> <p>determine the importance of ecological balance.</p> <p>analyse the drawbacks of kingship and autocracy</p> <p>answer short and long answer questions based on the text.</p>	<p><b>Students will do the following:</b></p> <p>1.Design a poster to spread awareness about saving the tiger population</p> <p>2. Write a letter to the editor on the increasing cruelty towards animals. Appeal to the authorities to prohibit animal use and abuse in circus.</p>	<p><b>Students will be assessed through:</b></p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p>
July	<b>Keeping Quiet by Pablo Neruda</b>	<p><b>Each student will be able to</b></p> <p>list down the different kinds of wars fought by humans</p> <p>comment on the need of the hour to maintain peace</p>	<p><b>Students will do the following:</b></p> <p>1. Imagine that the world has come to an end You and your friends have survived You decide to create a new society where only peace and brotherhood prevails. Create your society. You will draw/sketch/ paint/your society wherein</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision test through Google forms</p> <p>Class participation</p>

		<p>justify the title</p> <p>analyse the poetic devices</p> <p>list down a list of new words and look up for their meaning</p> <p>write answers to the questions from the lesson.</p>	<p>you enlist the following things: A map, the motto, rules to govern your society, a symbol of peace, etc.</p> <p>2. The last two years of school tend to be about planning for life after school. This can be motivating overwhelming or encouraging for some, and stressful for others. Write a diary entry recording your thoughts on the following: Neruda's ideas in 'Keeping Quiet' as a guide in this situation. Thinking differently about your decisions with reference to Neruda's Keeping Quiet.</p>	<p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p>
July	The Rattrap by Selma Lagerlof	<p><b>Each student will be able to</b></p> <p>effectively provide a synopsis of the story.</p> <p>analyze the values and thought process of the story.</p> <p>identify the insecurity while tackling personal fears and horrors that lurk in the recesses of our mind.</p> <p>appreciate the significance of developing personal fears yet rising above them to savor real liberty. enrich vocabulary</p> <p>justify the title</p> <p>attempt questions based on the lesson express themselves through the writing tasks</p>	<p><b>Students will do the following:</b></p> <p>Imagine that you overheard the interaction between the valet and the housekeeper at the ironmaster's mansion at the end of the story. Write your response in the form of an entry in your daily journal.</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision Test through Google forms</p> <p>Practice Worksheets</p> <p>Assignment Long Answer Questions</p>
July	Formal and Informal Invitations & Replies	<p><b>Each student will be able to</b></p>	<p><b>Students will do the following:</b></p>	<p><b>Students will be assessed through:</b></p>



	(Acceptance and Regret)	enhance their creative skills  draft – formal & informal invitations, letters of acceptance & regret express themselves through writing tasks	draft invitations and give replies to them .	Class and home assignments
MONTH	TOPICS/NO. OF PERIODS	LEARNING OUTCOMES	ACTIVITY	ASSESSMENT
August	Journey to the end of the Earth by Tishani Joshi	Each student will be able to  analyse the geological phenomenon that helps one to know about the history of humankind  list down the indications for the future of humankind  reason out why Antarctica is the place to go to, to understand the earth's present, past and future	Students will do the following:  1. Imagine an interview where Green is asked to explain more about his work and why he decided to initiate programs for students. Keeping both Green and the interviewer's perspectives in mind, pen down this interview.  2. Imagine you are the narrator writing to your parents back home telling them about your experience in Antarctica and how it is similar to that back home in some ways.	Students will be assessed through:  Short Revision Test through Google forms  Practice Worksheets  Assignment Long Answer Questions
August	Indigo by Louis Fischer	Each student will be able to  comment on the theme  learn more about the Champaran Movement  analyze Gandhi's role in helping peasants comment on the sharecropping agreement  draft a character sketch of Rajkumar Shukla	Students will do the following:  1. Write a speech on: The text 'Indigo' expresses the value of freedom and Indians' fight for freedom. How would you define FREEDOM? Write your views in the form of a speech to be delivered in the morning assembly of your school. Don't exceed 150 words.  2. Let us assume it was Rajendra Prasad who informed Charles Freer Andrews of Gandhi's decision and the	Students will be assessed through:  Short Revision test through Google forms  Class participation  Submission of work  Practice Worksheets  Assignment Long Answer

		<p>comment on Gandhi's influence on the lawyers</p> <p>develop self - reliance, confidence, sense of sacrifice and sensibility</p> <p>make a list of new words and phrases learnt</p> <p>write answers to the questions from the lesson.</p>	<p>reasons for other leaders' support of him. Thinking creatively of how Andrews would have responded, pen down the discussion you think would have taken place between Rajendra Prasad and Andrews.</p>	Questions
August	<b>A Roadside Stand by Robert Frost</b>	<p><b>Each students will be able to</b></p> <p>bring out the callous attitude of the rich towards the poor</p> <p>bring out the poet's urge for sympathy for rural people and analyse the title</p> <p>comment on the theme- reality of class difference between the city rich and the rural poor</p> <p>comment on the rhyme scheme and the stanza division</p>	<p><b>Students will do the following:</b></p> <p>1. Your school is going to conduct a symposium on the issue, Rural Urban Divide, for the students of Class XII. Draft a notice for the school notice board.</p> <p>2. Imagine a child from the farmer's family migrates to the city for their education. As the child, write back to your family telling them whether you would or would not want to turn into a city-person. Use the context of the poem "A Roadside Stand" in mind to pen down this letter.</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision Test through Google forms</p> <p>Practice Worksheets</p> <p>Assignment Long Answer Questions</p>
August	<b>Writing Skills Job Application</b>	<p><b>Each student will be able to</b></p> <p>draft job applications and resume as per the format learnt</p> <p>write resumes/ bio-data/ curriculum vitae</p> <p>express themselves in grammatically correct language</p>	<p><b>Students will do the following:</b></p> <p>1. You are Anand/Arti of 14, Model Town, Delhi. You have seen an advertisement in The Hindu for the post of Chief Chef in a 5-Star Hotel. Apply for the job with complete biodata. Write in 120-150 words.</p> <p>2. You are Prem/Parul of 16, TT Nagar,</p>	<p><b>Students will be assessed through:</b></p> <p>Class and home assignments</p>

		improve upon their writing skills	Bhopal. You would like to apply for the post of Marketing Manager in a reputed firm in Mumbai. Write a letter to the Public Relations Officer, Chantac Enterprises, Mumbai, applying for the job. Write the letter in 120-150 words giving your biodata.	
MONTH	TOPICS/NO. OF PERIODS	LEARNING OUTCOMES	ACTIVITY	ASSESSMENT
September	Poets and Pancakes by Asokamitran	<p>Each student will be able to</p> <p>analyze and justify the title</p> <p>comment on the humour used and the theme of the lesson</p> <p>bring out the struggle that Ashokmitran went through</p>	<p><b>Students will do the following:</b></p> <p>1. You must have met some interesting characters in your neighbourhood or among your relatives. Write a humorous account about their idiosyncracies</p> <p>2. Create a collage or a cartoon strip: Collect about twenty cartoon strips from newspaper and magazines in any language to discuss how important people or events have been satirized Comment on the use of words and pictures used. You may also create a comic strip on the same lines.</p>	<p><b>Students will be assessed through:</b></p> <p><b>MID - TERM EXAMINATION- 21.9.22 - 30.9.22</b></p> <p>Short revision test through Google forms</p> <p>Practice Worksheets</p> <p>Assignment Long Answer Questions</p>
September	Aunt Jennifer's Tigers by Adrienne Rich	<p>Each student will be able to</p> <p>facilitate making connections between similar situations in different storylines/life experiences.</p> <p>comment on the title</p>	<p><b>Students will do the following:</b></p> <p>1. <b>Art Integrated Activity:</b> Add a stanza to the poem</p> <p>2. No two individuals will be similar and will think alike. Each has to accept the</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision test through Google forms</p> <p>Class participation</p>

		<p>empathize with Aunt Jennifer's problems and seek resolution.</p> <p>think and produce spontaneous, fluid and expression in poetic texts to convey a social change.</p> <p>discern prevailing inequalities in various guises</p>	<p>other with their differences. When one is unable to do so, the relationship itself becomes a burden. And, that is what happened to Aunt Jennifer. What changes do you advocate to promote marital harmony.</p>	<p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Long Answer Questions</p>
September	<b>The Enemy by Pearl S. Buck</b>	<p><b>Each student will be able to</b></p> <p>familiarize themselves with specific background of political enmity.</p> <p>identify and make connections between similar situations in own life experiences where our prejudices often hinder our human compassion and empathy for a political enemy.</p> <p>Comment on the significance of professional ethics and social obligation in sensitive times.</p> <p>express themselves through writing tasks</p>	<p><b>Students will do the following:</b></p> <p>You recently watched an interview of one of the doctors who serves for the organisation named, 'Doctors without Borders'. This organisation serves people in remote corners of the world which are affected by civil strife, poverty and lack medical facilities. You were impressed with the dedication, compassion and professional ethics of this doctor. Write an article for an e-zine expressing the need for more such people in the world to serve selflessly.</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision test through Google forms</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Long Answer Questions</p>
September	<b>On the Face of It by Susan Hill</b>	<p><b>Each student will be able to</b></p> <p>bring out the theme</p> <p>justify the title</p> <p>build up optimism and self-confidence.</p> <p>fight out their loneliness, depression and disappointment.</p>	<p><b>Students will do the following:</b></p> <p>Imagine that the encounter with Mr. Lamb marked a turning point in Derry's life. Many years later, Derry is invited to present a TED Talk on the challenges he faced and overcame. He thinks about the bitterness he carried earlier towards people and the world, and how his attitude changed. He decides to speak about the transformation in his</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision test through Google forms</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p>

		<p>accept the physically challenged people positively in their life and expand their social interaction</p> <p>express themselves through an article writing</p>	<p>relationship with himself, and understanding what kindness towards oneself might actually means. He agrees to weave his speech on 'Not the face of a victim'. As Derry, create the speech draft for the TED Talk.</p>	<p>Assignment Long Answer Questions</p>
MONTH	TOPICS/NO. OF PERIODS	LEARNING OUTCOMES	ACTIVITY	ASSESSMENT
October	The Interview by Christopher Silvester	<p><b>Each student will be able to</b></p> <p>learn about the technique of 'interview' as a new way of interrogating.</p> <p>list down the use of linkers and signallers while conducting an interview</p> <p>give reasons why Umberto Eco likes/does not like being interviewed</p> <p>analyse why the novel, The Name of the Rose is a great success</p>	<p><b>Students will do the following:</b></p> <p>1. Report Writing: produce a short report of the interview conducted by Mukund Padmanabhan using the salient points</p> <p>Review and revise sample interview questions. Brainstorm questions for an interview. Conduct and record an interview.</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision Test through Google forms</p> <p>Practice Worksheets</p> <p>Assignment Long Answer Questions</p>
October	Going Places by A.R. Barton	<p><b>Each student will be able to</b></p> <p>List down the differences between them that show up between Sophie and Jansie in the story</p> <p>describe the character and temperament of Sophie's father</p>	<p><b>Students will do the following:</b></p> <p>1. Imagine Sophie's father finds out about Sophie's going to the canal to meet Danny Casey which leads him to think that she has lied to everyone about the whole affair. He is infuriated and prohibits Sophie from going anywhere except to school. As Geoff, write a diary</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision Test through Google forms</p> <p>Practice Worksheets</p>

		<p>analyse why Sophie liked her brother Geoff more than any other person</p> <p>draft character sketches</p>	<p>entry disapproving of your father's punishment by citing your reasons for being sympathetic to Sophie.</p> <p>2. I cannot get myself to stand with father in his tirade against Sophie. Sure, she is not the most... ii Imagine Sophie meets Danny Casey after several years. Write a dialogue exchange between them where Sophie explains what that meeting means to her.</p>	Assignment Long Answer Questions
October	Memories of Childhood By Zitkala-Sa and Bama	<p><b>Each student will be able to</b></p> <p>find out the commonality of theme found in the two distant cultures in the account</p> <p>analyse how injustice in any form cannot escape being noticed even by children</p> <p>comment on Bama's experience as a victim of the caste system.</p> <p>analyse the kind of discrimination that Zitkala-Sa experiences</p>	<p><b>Students will do the following:</b></p> <p>1. Imagine Zitkala- Sa and Bama meet each other. They both share their experience of being from marginalised communities. They reflect on instances of oppression they faced and how those instances proved to be the source of strength to fight against such oppression. Write down their discussion in a creative way, with reference to their experiences.</p>	<p><b>Students will be assessed through:</b></p> <p>Short Revision Test through Google forms</p> <p>Practice Worksheets</p> <p>Assignment Long Answer</p>
November	Revision	<p><b>Each student will be able</b></p> <p>revise all lessons from the literature section</p> <p>revise formats and content of all writing tasks</p> <p>practise case based passages</p>	<p><b>Students will do the following:</b></p> <p>revise all lessons from the literature section</p> <p>revise formats and content of all writing tasks</p> <p>practise case based passages</p>	<p><b>Students will be assessed through:</b></p> <p><b>Revision Test - 21.11.22 - 30.11.22</b></p>

December	Revision	<p><b>Each student will be able to</b></p> <p>revise all lessons from the literature section</p> <p>revise formats and content of all writing tasks</p> <p>practise case based passages</p>	<p><b>Students will do the following:</b></p> <p>Attempt questions from all sections of the question paper</p>	<p><b>Students will be assessed through:</b></p> <p><b>Pre -Board Examination - 28.12.22 - 18.1.23</b></p>
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**CLASS XII BIOLOGY  
(MARCH – JANUARY)**

MONTH	NO. OF PERIODS/TOPICS COVERED	LEARNING OUTCOMES	ACTIVITIES	ASSESSMENT
March	Reproduction in Organisms ****	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>define reproduction</li> <li>name the two types of reproduction</li> <li>list the characteristics of asexual and sexual reproduction</li> <li>differentiate between asexual and sexual reproduction</li> <li>mention the unique feature with respect to flowering and fruiting in bamboo species</li> <li>compare oestrus cycle and menstrual cycle</li> <li>explain the pre-fertilization and post- fertilization events in sexual reproduction</li> <li>analyse the consequences if cell divisions are not followed by cell differentiation in a developing embryo</li> </ul>	<ul style="list-style-type: none"> <li>Identification of organisms as monoecious and dioecious</li> <li>Identification of diagrams of asexual and sexual reproduction</li> </ul>	<ul style="list-style-type: none"> <li>Class participation</li> </ul>



	Sexual Reproduction in Flowering Plants (9)	<p>Each student will be able to-</p> <ul style="list-style-type: none"> <li>• describe the reproductive parts of flower</li> <li>• explain development of male gametophyte and female gametophyte</li> <li>• compare microsporogenesis and megasporogenesis</li> <li>• mention the types of pollination, the agents needed and its significance</li> <li>• differentiate between autogamy and geitonogamy</li> <li>• explain double fertilization</li> <li>• draw the diagrams of microsporangium and megasporangium</li> <li>• state three outbreeding devices that flowering plants have developed</li> </ul>	<ul style="list-style-type: none"> <li>• Identification of various parts of the flower especially the reproductive parts, i.e., stamen and pistil in the flower</li> <li>• Identification of flowers adapted to pollination by different agencies (wind, insects, birds)</li> <li>• Analysing the role of colours in the pollination of plants.</li> <li>• Drawing neat and labeled diagrams of a section of young and mature anther</li> <li>• Drawing neat and labelled diagrams of different stages of megaspore and embryo sac</li> <li>• Listing different pollination mechanisms with examples</li> <li>• Creating a story from formation of pollen to fruit formation.</li> <li>• Relating the use of pollen in energy shakes to improvement in the performance of athletes.</li> <li>• Solving numerical problems based on sexual reproduction</li> </ul>	<ul style="list-style-type: none"> <li>• Class participation (written and oral)</li> <li>• Weekly assignment (submission of work)</li> </ul>

			<p>in plants</p> <ul style="list-style-type: none"> <li>Practice of key words</li> </ul>	
April	Sexual Reproduction in Flowering Plants (2)	<p>Each student will be able to-</p> <ul style="list-style-type: none"> <li>differentiate between albuminous and non-albuminous seeds</li> <li>explain apomixis and polyembryony</li> </ul>	<ul style="list-style-type: none"> <li>Making a list of edible parts of 5 different types of fruits</li> <li>Drawing labelled diagrams of different types of seeds.</li> </ul> <p><b>Experiment (Biology Lab) (2 classes)</b></p> <ul style="list-style-type: none"> <li>Preparation of a temporary mount to observe pollen germination</li> <li>Pollen germination on stigma through a permanent slide or scanning electron micrograph.</li> </ul>	<ul style="list-style-type: none"> <li>Quiz using Google forms</li> <li>Class participation (written and oral)</li> <li>Weekly assignment/ worksheet (submission of work)</li> </ul>
	Human Reproduction (9)	<p>Each student will be able to-</p> <ul style="list-style-type: none"> <li>explain the human male and female reproductive systems</li> <li>mention the difference between spermiogenesis and spermiation</li> <li>illustrate spermatogenesis and oogenesis</li> </ul>	<ul style="list-style-type: none"> <li>Drawing diagrams of male and female reproductive systems</li> <li>Drawing diagrams of sectional view of mammary gland and seminiferous tubule</li> <li>Drawing diagram of structure of sperm</li> <li>Drawing a graph depicting</li> </ul>	<ul style="list-style-type: none"> <li>Quiz using Google forms</li> <li>Class participation (written and oral)</li> <li>Weekly assignment/ worksheet (submission of work)</li> <li>Art Integrated learning</li> </ul>

		<ul style="list-style-type: none"> <li>differentiate between major structural changes in the human ovary during follicular and luteal phase of menstrual cycle</li> <li>describe the fertilization in humans</li> <li>enumerate the steps of development of embryo</li> <li>explain parturition and lactation.</li> </ul>	<p>various events during a menstrual cycle.</p> <ul style="list-style-type: none"> <li>Showing schematic representation of spermatogenesis and oogenesis</li> <li>Comparing spermiogenesis and spermiation as well as spermatogenesis and oogenesis</li> <li>Solving numerical problems on the number of eggs and sperms produced in a given situation.</li> <li>Analyzing various causes of abortion / miscarriage.</li> <li>Practice of key words</li> </ul> <p><b>Experiment (Biology Lab) (2 classes)</b></p> <ul style="list-style-type: none"> <li>Flowers adapted to pollination by different agencies (wind, insects, birds)</li> <li>Controlled pollination - emasculation, tagging and bagging.</li> </ul> <p><b>Art Integration 'Poster/Flyer'</b></p>	
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			<ul style="list-style-type: none"> <li>Students will make a flyer/poster to create awareness regarding maintenance of hygiene and sanitation during menstruation.</li> </ul>	
	Reproductive Health (5)	<p>Each student will be able to-</p> <ul style="list-style-type: none"> <li>mention the problems that are taken care of by Reproductive and Child Health Care Programme</li> <li>enumerate the various methods of birth control</li> <li>list any four characteristics of an ideal contraceptive</li> <li>state the various types of sexually transmitted diseases and mention three practices to avoid them</li> <li>suggest and explain three Assisted Reproductive Technologies to assist an infertile couple</li> </ul>	<ul style="list-style-type: none"> <li>Identifying the pictures depicting population explosion followed by discussion on population explosion and its effects and the importance of birth control</li> <li>Making a flow chart to show the different types of contraceptive methods and stating reasons for adopting them</li> <li>Analyzing the role of copper releasing IUDs (CuT, Cu7, Multiload 375)</li> <li>Making a flow chart to show assisted reproductive technologies that assist couples to have children</li> <li>Interpreting the role of ancient methods in curing infertility.</li> <li>Practice of key words</li> </ul>	<ul style="list-style-type: none"> <li>Quiz using Google forms</li> <li>Class participation (written and oral)</li> <li>Weekly assignment/ worksheet (submission of work)</li> </ul>

			<p><b>Experiment (Biology Lab) (2 classes)</b></p> <ul style="list-style-type: none"> <li>• Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice)</li> <li>• T.S. of blastula through permanent slides (Mammalian)</li> </ul>	
	Principles of Inheritance and Variation (2)	<p>Each student will be able to –</p> <ul style="list-style-type: none"> <li>• state the Mendel's laws of inheritance</li> <li>• draw the monohybrid cross and calculate the phenotypic ratio 3:1</li> </ul>	<ul style="list-style-type: none"> <li>• Drawing the monohybrid cross to find the phenotypic ratio 3:1 as well as genotypic ratio 1:2:1</li> <li>• Drawing monohybrid cross showing inheritance of flower colour in Snapdragon or Antirrhinum sp.</li> <li>• Practice of key words</li> </ul>	<ul style="list-style-type: none"> <li>• Class participation (written and oral)</li> <li>• Weekly assignment (submission of work)</li> </ul>
May	Principles of Inheritance and Variation (18)	<p>Each student will be able to –</p> <ul style="list-style-type: none"> <li>• differentiate between monohybrid and dihybrid cross</li> <li>• draw the dihybrid cross</li> </ul>	<ul style="list-style-type: none"> <li>• Drawing of dihybrid cross to find the phenotypic ratio 9:3:3:</li> <li>• Calculation of phenotypic ratio of dihybrid cross</li> </ul>	<ul style="list-style-type: none"> <li>• Class participation (written and oral)</li> <li>• Weekly assignment/ worksheet (submission of work)</li> </ul>

		<p>and calculate the phenotypic ratio 9:3:3:1</p> <ul style="list-style-type: none"> <li>define and design a test cross</li> <li>compare dominance, co-dominance and incomplete dominance</li> <li>justify that linkage and crossing over are alternatives of each other</li> <li>describe the sex determination in human beings</li> <li>mention sex determination in birds</li> </ul>	<ul style="list-style-type: none"> <li>Comparing dominance, co-dominance and incomplete dominance</li> <li>Drawing a cross to show sex determination in humans</li> <li>Drawing pedigree charts to trace pattern of inheritance of Mendelian disorders.</li> <li>Practice of key words</li> </ul> <p><b>Art Integration-Comic Strip</b></p> <ul style="list-style-type: none"> <li>Students will make a comic strip on sex determination in humans.</li> </ul>	<ul style="list-style-type: none"> <li>Art Integrated learning</li> </ul> <p><b><u>Term-I Weekly test (Round 1)-20.05.22</u></b></p> <ul style="list-style-type: none"> <li>Sexual Reproduction in Flowering Plants</li> <li>Human Reproduction</li> <li>Reproductive Health</li> </ul>
July	Principles of Inheritance and Variation (4)	<p>Each student will be able to-</p> <ul style="list-style-type: none"> <li>illustrate genetic disorders with pedigree charts</li> <li>compare Mendelian and chromosomal disorders</li> <li>explain two Mendelian and two chromosomal disorders</li> </ul>	<ul style="list-style-type: none"> <li>Drawing pedigree charts to trace pattern of inheritance of Mendelian disorders.</li> <li>Practice of key words</li> </ul> <p><b>Experiment (Biology Lab) (4 classes)</b></p> <ul style="list-style-type: none"> <li>Mendelian inheritance using seeds of different colour/sizes of any plant.</li> <li>Prepared pedigree charts of any one of the genetic traits such as rolling of tongue,</li> </ul>	<ul style="list-style-type: none"> <li>Quiz using Google forms</li> <li>Class participation (written and oral)</li> <li>Weekly assignment/ worksheet (submission of work)</li> </ul>

			blood groups, ear lobes, widow's peak and colour blindness.	
	Molecular basis of Inheritance (14)	<p>Each student will be able to-</p> <ul style="list-style-type: none"> <li>• explain the structure of DNA</li> <li>• compare the packaging of DNA helix in prokaryotes and eukaryotes.</li> <li>• justify giving reason that RNA is the first genetic material</li> <li>• explain Hershey-Chase experiment as well as Meselson and Stahl's experiment</li> <li>• draw a labelled schematic sketch of replication fork of DNA</li> <li>• describe the initiation, elongation and termination process of transcription in bacteria</li> <li>• state essential role of ribosome during translation</li> </ul>	<ul style="list-style-type: none"> <li>• Drawing the structure of DNA and nucleosome</li> <li>• Identification, drawing and labelling of diagrams related to replication, transcription, translation and lac operon</li> <li>• Constructing a complete transcription unit with promoter and terminator on the basis of hypothetical template strand</li> <li>• Identification of types of mutation from the pictures</li> <li>• Identification of features of genetic code by studying the nucleotide sequence of mRNA strand</li> <li>• Practice of key words</li> </ul> <p><b>Experiment (Biology Lab)</b> <b>(4 classes)</b></p> <ul style="list-style-type: none"> <li>• Prepare a temporary mount of onion root tip to study mitosis.</li> <li>• Meiosis in onion bud cell or</li> </ul>	<ul style="list-style-type: none"> <li>• Quiz using Google forms</li> <li>• Class participation (written and oral)</li> <li>• Weekly assignment/ worksheet (submission of work)</li> </ul>

		<ul style="list-style-type: none"> <li>describe the role of lactose in lac operon</li> <li>state as to why Human Genome project is called a mega project</li> <li>list the steps of DNA fingerprinting</li> </ul>	grasshopper testis through permanent slides	
	Evolution (2)	<p>Each student will be able to-</p> <ul style="list-style-type: none"> <li>explain different theories for origin of life</li> <li>describe Miller's experiment for evolution</li> <li>mention the theories of evolution and their evidences</li> </ul>	<ul style="list-style-type: none"> <li>Diagrammatic representation of Miller's experiment</li> </ul>	<ul style="list-style-type: none"> <li>Class participation (written and oral)</li> <li>Weekly assignment/ worksheet (submission of work)</li> </ul> <p><b><u>Term-I Weekly test (Round 2)-29.07.22</u></b></p> <ul style="list-style-type: none"> <li>Sexual Reproduction in Flowering Plants</li> <li>Human Reproduction,</li> <li>Reproductive Health</li> <li>Principles of Inheritance and Variation</li> </ul>
August	Evolution (5)	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>compare divergent and convergent evolution</li> <li>explain adaptive radiation and biological evolution</li> <li>compare mutation theory</li> </ul>	<ul style="list-style-type: none"> <li>Identification of pictures of homologous organs in plants and animals</li> <li>Identification of picture showing convergent evolution of Australian Marsupials and placental mammals</li> </ul>	<ul style="list-style-type: none"> <li>Quiz using Google forms</li> <li>Class participation (written and oral)</li> <li>Weekly assignment/ worksheet</li> </ul>



		<p>of Hugo de Vries and Darwin's theory of natural selection</p> <ul style="list-style-type: none"> <li>state Hardy- Weinberg principle</li> <li>giving three reasons as to how Hardy-Weinberg equilibrium can be affected.</li> <li>list the steps of origin and evolution of man</li> </ul>	<ul style="list-style-type: none"> <li>Diagrammatic representation of the operation of natural selection on different traits</li> <li>Sketch of the evolution of plant forms through geological periods</li> <li>Representative evolutionary history of vertebrates through geological periods</li> <li>Comparison of the skulls of adult modern human being, baby chimpanzee and adult chimpanzee</li> </ul> <p><b>Experiment (Biology Lab) (2 classes)</b></p> <ul style="list-style-type: none"> <li>Flash cards/ models showing examples of homologous and analogous organs.</li> </ul>	(submission of work)
	Human Health and Disease (7)	<p>Each student will be able to-</p> <ul style="list-style-type: none"> <li>state any two factors which affect the health</li> <li>mention the symptoms, preventive measures and cure of two common diseases</li> <li>explain the life cycle of</li> </ul>	<ul style="list-style-type: none"> <li>Diagrammatic representation of the stages in the life cycle of Plasmodium</li> <li>Identification of the diseases from their symptoms</li> <li>Drawing structure of an antibody molecule</li> <li>Making a flow chart to show</li> </ul>	<ul style="list-style-type: none"> <li>Online quiz using Google forms</li> <li>Class participation (written and oral)</li> <li>Weekly assignment/worksheet (submission of work)</li> </ul>

		<p>malarial parasite in human body</p> <ul style="list-style-type: none"> <li>list the four types of barriers in innate immunity</li> <li>differentiate between innate and acquired immunity as well as active and passive immunity</li> <li>compare the role of B and T lymphocytes</li> <li>state the role of spleen and thymus in human body list three ways of transmission of HIV infection</li> <li>mention the events which occur in human body to cause immunodeficiency, when HIV gains entry into the body</li> <li>describe the causes of cancer and its treatment</li> <li>list the drug types and their effects</li> </ul>	<p>the steps of replication of retrovirus</p> <ul style="list-style-type: none"> <li>Identification of a drug from its chemical structure and its effects in the human body</li> <li>Practice of key words <b>Art Integration 'Role Play'</b></li> <li>Each student will select a disease from the topic "Human Health and disease" and personify the same. The student will record the role play and present it in the class.</li> <li><b>Experiment (Biology Lab) (2 classes)</b></li> <li>Common disease-causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through virtual images. Comment on symptoms of diseases that they cause.</li> </ul>	<ul style="list-style-type: none"> <li>Art integrated learning</li> </ul>
	<p><i>Strategies for Enhancement in Food Production</i> ****</p>	<p><i>Each student will be able to</i></p> <ul style="list-style-type: none"> <li><i>explain in brief the role of animal husbandry in human welfare</i></li> </ul>	<ul style="list-style-type: none"> <li><i>Making a mind map on animal husbandry</i></li> <li><i>Identification of a crop variety from its resistance to diseases or insect pests</i></li> </ul>	<ul style="list-style-type: none"> <li><i>Class participation</i></li> </ul>

		<ul style="list-style-type: none"> <li>• <i>mention the advantage and disadvantage of inbreeding</i></li> <li>• <i>state three outbreeding practices in domestic animals</i></li> <li>• <i>describe the role of bee-keeping and fishery in enhancement of food production</i></li> <li>• <i>list the main steps in breeding a new genetic variety of a crop</i></li> <li>• <i>state four objectives of biofortification.</i></li> <li>• <i>mention the economic value of spirulina</i></li> <li>• <i>list the various steps in tissue culture</i></li> <li>• <i>state the advantage of producing plants by micro-propagation</i></li> <li>• <i>compare somaclones and somatic hybrids</i></li> </ul>		
	Microbes in Human Welfare (5)	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>• name the different types of microbes</li> <li>• explain the role of</li> </ul>	<ul style="list-style-type: none"> <li>• Making a flow chart to depict the role of microbes in human welfare</li> <li>• Identification of different types of microbes from their</li> </ul>	<ul style="list-style-type: none"> <li>• Online quiz using Google forms</li> <li>• Class participation</li> </ul>

		<p>microbes in household and industrial products</p> <ul style="list-style-type: none"> <li>describe the importance of microbes in sewage treatment and in production of biogas</li> <li>mention the usefulness of microbes as biocontrol agents and as biofertilizers</li> </ul>	<p>pictures</p> <ul style="list-style-type: none"> <li>Diagrammatic representation of a typical biogas plant</li> <li>Practice of key words</li> </ul> <p><b>Experiment (Biology Lab) (2 classes)</b></p> <ul style="list-style-type: none"> <li>Model specimens showing symbiotic association in root nodules of leguminous plants, Cuscuta on host, lichens.</li> </ul>	<p>(written and oral)</p> <ul style="list-style-type: none"> <li>Weekly assignment/worksheet (submission of work)</li> </ul>
	Biotechnology: Principles and Processes (2)	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>explain biotechnology</li> <li>mention two core techniques that enabled the birth of biotechnology</li> <li>state three basic steps in genetically modifying an organism</li> <li>list three key tools of recombinant DNA technology</li> </ul>	<ul style="list-style-type: none"> <li>Diagrammatic representation of recombinant DNA technology</li> </ul>	<ul style="list-style-type: none"> <li>Class participation (written and oral)</li> <li>Weekly assignment/worksheet (submission of work)</li> </ul>
September	Biotechnology: Principles and Processes (6)	<p>Each student will be able to-</p> <ul style="list-style-type: none"> <li>explain the naming and mechanism of action of</li> </ul>	<ul style="list-style-type: none"> <li>Drawing E. coli cloning vector pBR322</li> <li>Diagrammatic representation</li> </ul>	<ul style="list-style-type: none"> <li>Online quiz using Google forms</li> <li>Class participation</li> </ul>

		<p>restriction enzymes</p> <ul style="list-style-type: none"> <li>compare the role of exonuclease and endonuclease</li> <li>name two cloning vectors that are used in experiment with E. coli</li> <li>state two uses of cloning vector in biotechnology</li> <li>state the methods employed to make bacterial cell competent to take up DNA</li> <li>list the processes of rDNA technology</li> <li>describe a technique to obtain multiple copies of a gene in vitro</li> <li>mention the role of bioreactors</li> </ul>	<p>of steps of polymerase chain reaction (PCR)</p> <ul style="list-style-type: none"> <li>Comparison of simple stirred-tank bioreactor and sparged stirred-tank bioreactor with the help of their diagrams</li> <li>Practice of key words</li> </ul> <p><b>Experiment (Biology Lab) (2 classes)</b></p> <ul style="list-style-type: none"> <li>Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.</li> </ul>	<p>(written and oral)</p> <ul style="list-style-type: none"> <li>Weekly assignment/worksheet (submission of work)</li> </ul>
	Biotechnology and its Applications (2)	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>describe biotechnological applications in agriculture and medicine</li> <li>list any four applications of genetically modified plants</li> <li>name the cry genes that</li> </ul>	<ul style="list-style-type: none"> <li>Making a flow chart to show the steps involved in the production of nematode resistant tobacco plants</li> <li>Practice of key words</li> </ul>	<ul style="list-style-type: none"> <li>Class participation (written and oral)</li> <li>Weekly assignment/worksheet (submission of work)</li> </ul>

		<p>control cotton bollworm and corn borer</p> <ul style="list-style-type: none"> <li>explain the process involved in the production of nematode resistant tobacco plants</li> </ul>		
	Revision for Mid-Term Exams (7)	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>answer simple MCQs on various concepts.</li> <li>solve assertion-reasoning based MCQs</li> <li>recall and apply concept to solve complex MCQs.</li> <li>solve source-based, case-based, diagram-based and pedigree chart-based questions</li> </ul>	<ul style="list-style-type: none"> <li>Students will solve questions given for practice from NCERT Textbook, Assignments, previous year's board papers and Exemplar (both written and oral) and get their doubts clarified</li> <li>Discussion on Important points and common errors</li> </ul>	<ul style="list-style-type: none"> <li>Class participation (written and oral)</li> </ul> <p><b>Mid-Term Examinations</b> <b>21.09.22 to 30.09.22</b></p> <ul style="list-style-type: none"> <li>Sexual Reproduction in Flowering Plants</li> <li>Human Reproduction</li> <li>Reproductive Health</li> <li>Principles of Inheritance and Variation</li> <li>Molecular basis of Inheritance</li> <li>Evolution</li> <li>Human Health and Disease</li> <li>Microbes in Human Welfare</li> </ul>
October	Biotechnology and its Applications (2)	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>compare the insulin produced by Eli Lilly and the one produced by human body</li> <li>describe the gene therapy</li> </ul>	<ul style="list-style-type: none"> <li>Diagrammatic representation of maturation of pro-insulin into insulin</li> <li>Practice of key words</li> </ul>	<ul style="list-style-type: none"> <li>Online quiz using Google forms</li> <li>Class participation (written and oral)</li> <li>Weekly</li> </ul>

		<p>procedure for ADA deficient patient</p> <ul style="list-style-type: none"> <li>list four ways in which transgenic animals can be beneficial to humans</li> <li>explain biopiracy and ethical issues</li> </ul>		<p>assignment/worksheet (submission of work)</p>
	Organisms and Populations (5)	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>list any four abiotic components that lead to variations in the physical and chemical conditions of habitats</li> <li>mention the different ways by which organisms cope or manage with abiotic stresses in nature</li> <li>give reason as to why there are more conformers than regulators in the animal world</li> <li>give any two examples of adaptations of animals</li> <li>state three attributes of population</li> <li>construct age pyramids showing expanding, stable and declining human population</li> </ul>	<ul style="list-style-type: none"> <li>Identification of major biomes of India from their pictures</li> <li>Diagrammatic representation of organismic response</li> <li>Construction of age pyramids for human population (expanding, stable and declining)</li> <li>Comparison of exponential growth and logistic growth with the help of population growth curve</li> <li>Identification of population interactions from the symbols and pictures shown</li> <li>Practice of key words</li> <li><b>Art Integration</b> <b>'PowerPoint Presentation'</b></li> <li>Students will make a power point presentation on the</li> </ul>	<ul style="list-style-type: none"> <li>Online quiz using Google forms</li> <li>Class participation (written and oral)</li> <li>Weekly assignment/worksheet (submission of work)</li> <li>Art integrated learning</li> </ul>

		<ul style="list-style-type: none"> <li>describe the population growth and its factors</li> <li>explain Verhulst-Pearl Logistic Growth of a population</li> <li>list any four population interactions and give one example of each.</li> </ul>	<p>various population interactions existing in nature and present it in the class.</p> <p><b>Experiment (Biology Lab) (4 classes)</b></p> <ul style="list-style-type: none"> <li>Study the plant population density by quadrat method.</li> <li>Study the plant population frequency by quadrat method.</li> </ul>	
	Ecosystem (3)	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>describe the components of ecosystem</li> <li>mention any two reasons why the primary productivity varies in different types of ecosystems</li> <li>differentiate between net primary productivity and gross primary productivity</li> <li>explain decomposition of detritus by different agents which is then made available as nutrients to the plants</li> <li>give one example each of</li> </ul>	<ul style="list-style-type: none"> <li>Diagrammatic representation of decomposition cycle in a terrestrial ecosystem</li> <li>Diagrammatic representation of trophic levels in an ecosystem and the energy flow through them</li> <li>Construction of three types of ecological pyramids (pyramids of numbers, biomass and energy)</li> <li>Diagrammatic representation of primary succession</li> <li>Drawing simplified model of carbon cycle and phosphorous cycle</li> </ul>	<ul style="list-style-type: none"> <li>Online quiz using Google forms</li> <li>Class participation (written and oral)</li> <li>Weekly assignment/worksheet (submission of work)</li> </ul>



		<p>a detrivore and a decomposer</p> <ul style="list-style-type: none"> <li>• list three parameters used for constructing ecological pyramid</li> <li>• construct pyramids of numbers, biomass and energy</li> <li>• compare two different types of pyramids of biomass with the help of an example</li> <li>• mention the role of pioneer species in primary succession on rocks</li> <li>• distinguish between primary and secondary ecological successions</li> <li>• mention important features of sedimentary cycle</li> <li>• draw simplified model of carbon cycle and phosphorus cycle</li> </ul>		
	Biodiversity and Conservation (3)	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>• mention three important components of biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>• Making Pie chart representing global biodiversity</li> <li>• Plotting a graph to show</li> </ul>	<ul style="list-style-type: none"> <li>• Online quiz using Google forms</li> <li>• Class participation</li> </ul>

		<ul style="list-style-type: none"> <li>• explain the importance of biodiversity for ecosystem functioning</li> <li>• state two effects of loss of biodiversity in a region</li> <li>• describe the causes of biodiversity loss</li> <li>• give reason as to why biodiversity should be conserved</li> <li>• state the in situ and ex situ conservation of biodiversity</li> </ul>	<p>species area relationship</p> <ul style="list-style-type: none"> <li>• Identifying the causes of biodiversity loss and ways of conserving biodiversity</li> <li>• Practice of key words</li> </ul>	<p>(written and oral)</p> <ul style="list-style-type: none"> <li>• Weekly assignment/worksheet (submission of work)</li> </ul>
	<p><i>Environmental Issues</i> ****</p>	<p><i>Each student will be able to:</i></p> <ul style="list-style-type: none"> <li>• <i>explain the causes and control of air and water pollution</i></li> <li>• <i>state the effect of eutrophication</i></li> <li>• <i>describe biomagnification of DDT in aquatic food chain</i></li> <li>• <i>state the effect of greenhouse effect and global warming as well as ozone depletion in stratosphere</i></li> <li>• <i>explain degradation by</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Diagrammatic representation of electrostatic precipitator</i></li> <li>• <i>Graph to show effect of sewage discharge on some important characteristics of a river</i></li> <li>• <i>Flow chart to show biomagnification of DDT in an aquatic food chain</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Class participation</i></li> </ul>

		<p><i>improper resource utilization and maintenance.</i></p> <ul style="list-style-type: none"> <li>• <i>mention the causes of deforestation</i></li> </ul>		
November	Practice for Revision Tests	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>• answer simple MCQs on various concepts.</li> <li>• solve case-based and assertion-reasoning based MCQs</li> <li>• recall and apply concept to solve complex MCQs.</li> <li>• solve source-based, case based, diagram-based and pedigree chart-based questions</li> </ul>	<ul style="list-style-type: none"> <li>• Students will solve questions given for practice from NCERT Textbook, Assignments, previous year's board papers and Exemplar (both written and oral) and get their doubts clarified</li> <li>• Discussion on Important points and common errors</li> </ul>	<ul style="list-style-type: none"> <li>• Class participation (written and oral)</li> </ul> <p><b>Revision Tests</b> <b>21.11.22 to 30.11.22</b></p> <ul style="list-style-type: none"> <li>• Sexual Reproduction in Flowering Plants</li> <li>• Human Reproduction</li> <li>• Reproductive Health</li> <li>• Principles of Inheritance and Variation</li> <li>• Molecular basis of Inheritance</li> <li>• Evolution</li> <li>• Human Health and Disease</li> <li>• Microbes in Human Welfare</li> <li>• Biotechnology: Principles and Processes</li> <li>• Biotechnology and its Applications</li> </ul>
December/January	Revision for Pre-Board Examination	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>• answer simple MCQs on various concepts.</li> </ul>	<ul style="list-style-type: none"> <li>• Students will solve questions given for practice from NCERT Textbook,</li> </ul>	<ul style="list-style-type: none"> <li>• Class participation (written and oral)</li> </ul>

		<ul style="list-style-type: none"> <li>• solve case-based and assertion-reasoning based MCQs</li> <li>• recall and apply concept to solve complex MCQs.</li> <li>• solve source-based, case based, diagram-based and pedigree chart-based questions</li> </ul>	<p>Assignments, previous year's board papers and Exemplar (both written and oral) and get their doubts clarified</p> <ul style="list-style-type: none"> <li>• Discussion on Important points and common errors</li> </ul>	<p><b>Pre-Board Examination</b> <b>28.12.22 to 18.01.23</b></p> <ul style="list-style-type: none"> <li>• Sexual Reproduction in Flowering Plants</li> <li>• Human Reproduction</li> <li>• Reproductive Health</li> <li>• Principles of Inheritance and Variation</li> <li>• Molecular basis of Inheritance</li> <li>• Evolution</li> <li>• Human Health and Disease</li> <li>• Microbes in Human Welfare</li> <li>• Biotechnology: Principles and Processes</li> <li>• Biotechnology and its Applications</li> <li>• Organisms and Populations</li> <li>• Ecosystem</li> <li>• Biodiversity and Conservation</li> </ul>
****	<p>The topics marked with asterisk in the syllabus have been deleted by CBSE for the academic year 2022-23. However, these topics will be covered through discussion in the class to bridge the learning gaps.</p>			

## CLASS XII (PHYSICS)

<i>Month</i>	<u>Topic</u>	<u>Learning Outcomes</u>	<u>Activities</u>	<u>Assessment</u>
<b>March (9 classes)</b>	<b>Electrostatics</b>	<p>Each student will be able to –</p> <ul style="list-style-type: none"> <li>*compare charge to mass.</li> <li>*list the properties of charges.</li> <li>*differentiate between the three methods of charging.</li> <li>*state Coulomb's law in electrostatics and express it mathematically.</li> <li>*derive the vector form of Coulombs law and draw a diagram to show direction of force between two charges.</li> <li>*apply superposition principle to write equation of force due to multiple charges.</li> <li>*derive mathematical expressions for electric field intensity to point charge, electric dipole.</li> </ul>	<ul style="list-style-type: none"> <li>*charging by friction activities.</li> <li>*draw Venn diagram to compare the different methods of charging.</li> <li>*draw graph to show variation of E with r due to a point charge.</li> <li>*draw graph to show variation of E with r due to an electric dipole.</li> <li>*working in pairs, solve related questions in class.</li> <li>*watch Edpuzzle video on electric field lines and answer the questions in it.</li> </ul>	<ul style="list-style-type: none"> <li>*Practice worksheet.</li> <li>*Weekly assignment questions from question bank and NCERT textbook exercise, board question papers.</li> </ul>
<u>Month</u>	<u>Topic</u>	<u>Learning Outcomes</u>	<u>Activities</u>	<u>Assessment</u>
<b>April (15 classes)</b>	<b>Electrostatics</b>	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>*explain the origin of torque on an electric dipole due to external field and relate torque to real life situations where torque is applied.</li> <li>*state Gauss's law and express it mathematically.</li> <li>*apply Gauss's law to calculate the electric field intensity due to a straight wire, thin spherical shell, and plane sheet of charge.</li> <li>*draw graphs to show the variation of E and V with r for the above charge distribution.</li> <li>*differentiate between electric potential and potential difference.</li> <li>*correlate electrostatic potential energy with stability of dipole and work done.</li> <li>*list the points of difference between polar and non polar dielectric.</li> </ul>	<ul style="list-style-type: none"> <li>* draw graphs to show the variation of E with respect to r for a straight wire, thin spherical shell, and plane sheet of charge.</li> <li>*draw Venn diagram to compare the electric field intensity and the potential due to a dipole.</li> <li>*design flow chart to enumerate the difference between polar and non polar dielectrics.</li> <li>* prepare a formula sheet</li> </ul>	<ul style="list-style-type: none"> <li>*Practice worksheet.</li> <li>*Weekly assignment questions from question bank and NCERT textbook exercise, board question papers.</li> <li>*Class Test</li> </ul>

		<ul style="list-style-type: none"> <li>*deduce mathematical equation for capacitance of a parallel plate capacitor.</li> <li>*compare the energy stored in a capacitor in series combination with that in parallel combination.</li> <li>*draw Venn diagram to enumerate the points of difference between capacitance of a capacitor with dielectric between its plate and that with a conducting slab.</li> <li>*apply formulae and concepts to solve related questions from sample papers, NCERT and board papers.</li> </ul>	for solving numerical questions. * draw Venn diagram to enumerate the points of difference between capacitance of a capacitor with dielectric between its plate and that with a conducting slab.	
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<u>Month</u>	<u>Topic</u>	<u>Learning Outcomes</u>	<u>Activities</u>	<u>Assessment</u>
<b>April (contd)</b> <b>(3 classes)</b> <b>May</b> <b>(12 classes)</b>	<b>Current Electricity</b>	Each student will be able to *differentiate between conductors and insulators. *explain why electrons drift through a conductor when p.d is applied. *deduce the equation for drift velocity of electrons. *relate drift velocity to electric current mathematically. *interpret the relation between drift velocity and mobility of electrons. *state Ohm's Law correctly and express it mathematically. *correlate the resistance of a wire to its dimensions.	*To plot a graph showing the variation of resistance with diameter of the wire. * Students will compile a list of electrical devices at home with the voltage/wattage at which they work, their current rating and	*Practice worksheet. *Weekly assignment questions from question bank and NCERT textbook exercise, board question papers. * <b>Weekly Test 1</b>

		<p>*draw VI graphs for Ohmic and non Ohmic conductors.</p> <p>*differentiate between resistance and resistivity of a conductor.</p> <p>*explain the effect of temperature on the resistance and resistivity of a conductor.</p> <p>*graphically show the variation of resistance and resistivity with temperature for conductors, insulators and semiconductors.</p> <p>*express electrical energy and power mathematically.</p> <p>*distinguish between emf and potential difference of a cell.</p> <p>*derive expression for the emf and the effective internal resistance in case of combination of cells.</p> <p>*state Kirchhoff's rules and apply it to obtain balance condition of Wheatstone bridge.</p> <p>*draw the circuit diagrams to show working and applications of meter bridge and potentiometer.</p>	<p>calculate their resistance.</p> <p>*In groups, make power point presentation on Ohm's Law and related topics and present to the class.</p> <p>*draw Venn diagram to enumerate the difference between emf of a cell and potential difference of a cell.</p> <p>*prepare a formula sheet.</p> <p>*apply formulae and concepts to solve related questions.</p>	<p><b>(13.5.2022)</b></p> <ul style="list-style-type: none"> <li>• Electric Charges and Fields</li> <li>• Electric Potential and Capacitance</li> <li>• Current Electricity (topics covered till 6.5.2022)</li> </ul>
<u>Month</u>	<u>Topic</u>	<u>Learning Outcomes</u>	<u>Activities</u>	<u>Assessment</u>
May (5 classes + 3 extra classes)	Magnetic Effects of Current and Magnetism	<p>Each student will be able to</p> <p>*enumerate the different sources of magnetic field.</p> <p>*compare magnetic field with that of electric field.</p> <p>*apply Biot Savart law to determine magnetic field intensity due to different current configurations.</p> <p>*interpret from Amper's circuital law that surface integral of B over closed surface is zero.</p> <p>*deduce expression for magnetic field intensity due to a current carrying loop, infinite straight wire.</p> <p>*apply formulae and concepts to solve related questions from sample papers, NCERT and board papers.</p>	<p>*students will design a comic strip to compare magnetic and electric field.</p> <p>*mark the direction of the magnetic dipole moment due to a current loop.</p> <p>*draw graphs to show variation of magnetic field with distance 'r' for a current carrying loop and compare it with that for electric field due to a dipole.</p> <p>*apply formulae to solve related numerical.</p>	<p>*Practice worksheet.</p> <p>*Weekly assignment questions from question bank and NCERT textbook exercise, board question papers.</p>

<u>Month</u>	<u>Topic</u>	<u>Learning Outcomes</u>	<u>Activities</u>	<u>Assessment</u>
July (10 classes) +(2 extra classes)	Magnetic Effects of Current and Magnetism	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>*compare and contrast the magnetic field due to a solenoid and toroid.</li> <li>*explain the difference in the force experienced by a moving charge in a magnetic field only with that moving in a crossed field.</li> <li>* conclude that a current-carrying conductor in a uniform magnetic field will experience a force.</li> <li>* apply the expression for the force on a current carrying conductor to solve related questions.</li> <li>* interpret the equation for the force between two current carrying conductors.</li> <li>*compare the torque experienced by an electric dipole in an electric field with that experienced by a current loop in uniform magnetic field.</li> <li>* compare and contrast the conversion of galvanometer into ammeter and voltmeter.</li> <li>*infer that ammeter has negligible resistance while voltmeter has very high resistance.</li> <li>*derive expression for magnetic dipole moment of a revolving electron.</li> <li>*compare and contrast the magnetic field of a bar magnet with that of a solenoid.</li> <li>*deduce equation for the magnetic field intensity of a bar magnet.</li> <li>*compare the properties of dia, para and ferro magnetic materials.</li> <li>*apply formulae and concepts to solve related questions from sample papers, NCERT and board papers.</li> </ul>	<ul style="list-style-type: none"> <li>*students will list the similarities in the magnetic field lines due to a bar magnet and a solenoid.</li> <li>*draw Venn diagram to compare the torque experienced by a electric dipole with that of a magnetic dipole.</li> <li>*prepare a formula sheet.</li> <li>*list the similarities and the differences in the magnetic field due to a bar magnet and a solenoid.</li> <li><b>*Lab Activity-</b> Expt 2-To find the value of the unknown resistance using a meter bridge (4 classes) Expt 3-To determine resistance of a galvanometer by half-deflection method and to find its figure of merit (4 classes) Expt 4- To find the frequency of AC mains using a sonometer (4 classes)</li> <li>*Practice Worksheet.</li> </ul>	<ul style="list-style-type: none"> <li>*Practice worksheet.</li> <li>*Weekly assignment questions from question bank and NCERT textbook exercise, board question papers.</li> <li>*Class Test/Assessment Worksheet</li> <li><b>*Weekly Test 2 (22.7.2022)</b> <ul style="list-style-type: none"> <li>• Current Electricity</li> <li>• Moving Charges and Magnetism</li> <li>• Magnetism and Matter(topics covered till 18.7.2022)</li> </ul> </li> </ul>



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<u>Month</u>	<u>Topic</u>	<u>Learning Outcomes</u>	<u>Activities</u>	<u>Assessment</u>
<b>July (contd)</b> <b>(8 classes)+(2 extra classes)</b> <b>August</b> <b>(6 classes)</b>	<b>Electromagnetic Induction and Alternating Current</b>	Each student will be able to *explain the consequences of Faraday's experiments. *state Faraday's laws in EMI and Lenz's Law. *apply Lenz's law/ Fleming's right hand rule to infer the direction of induced current to different circuit configurations. *differentiate between self and mutual induction. *derive mathematically the expressions of self-inductance of a long solenoid, mutual inductance of two coaxial solenoids. *list the applications of eddy currents. *state the working principle of a transformer. *interpret the causes of power loss in transformers. *list the ways of reducing the power loss in transformer. *differentiate between ac and dc voltage. *mathematically derive the equation for mean value and rms value of a c voltage /current. *explain behaviour of resistor, capacitor and inductor to a.c graphically *derive phase relation between current and voltage for these. *represent the phase relation between current and voltage through phasor diagrams. *deduce the phase relation between current and voltage in a LCR circuit. *correlate resonance in LCR circuit and its application in tuning *graphically represent the dependence of current on frequency for series LCR circuit. *state the principle of working of an a c generator. *explain the construction of the ac generator using diagram. *mathematically derive the expression for the induced emf and induced current for the same. *apply concepts and formulae and solve conceptual and numerical questions.	* Students will create mind map / flow chart on terms/concepts related to electromagnetic induction. *phet simulation on electromagnetic induction. *apply Lenz's law / Fleming's right hand rule to find direction of induced current in different cases. *identify the type of combination of the inductors as series or parallel and write equation for equivalent self inductance. ** tabulate the values of operating voltages of some of the electrical appliances at home and convert them into their peak value of ac voltage. *use phasor diagram to represent phase relation between current and voltage for inductor and capacitor circuits. *compare the role of resistor and inductor in an ac circuit using a Venn Diagram. *draw graphs to show variation of current with frequency for parallel LC	*Practice worksheet.  *Weekly assignment questions from question bank and NCERT textbook exercise, board question papers.  *Class Test/Assessment Worksheet

			<p>circuit</p> <p><b>* Lab Activity –</b>  Expt 5- To find the focal length of a given convex lens by plotting a graph between <math>u</math>, <math>v</math> or <math>1/u</math> and <math>1/v</math> (4 classes)  Expt 6- To study the dependence of angle of deviation on angle of incidence for an equilateral glass prism by plotting a graph between <math>i</math> and <math>d</math>. (4 classes)  Activities 1,2 from section A (4 classes)</p> <p><b>*Art Integrated Learning Activity:</b>  <b>Creative Corner:</b>  <b>design your e book(let) using canva-</b> students to design an e book using canva on any one of the topic- self induction / mutual induction / transformer/a c generator. Details will be shared in the Google Classroom.</p> <p>*Practice Worksheet.</p>	
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<u>Month</u>	<u>Topic</u>	<u>Learning Outcomes</u>	<u>Activities</u>	<u>Assessment</u>
<b>August (contd.) (3 classes)</b>  <b>August (contd.) (5 classes) + (2 extra classes)</b>	<b>Electromagnetic Waves</b>  <b>Wave Optics</b>	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>* differentiate between conduction current and displacement current.</li> <li>* list at least five characteristics of electromagnetic waves.</li> <li>* explain transverse nature of em waves(qualitatively).</li> <li>* identify the electromagnetic spectrum in terms of the wavelength/frequency.</li> <li>* write at least one use of the components of the electromagnetic spectrum.</li> </ul> <p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>*recapitulate the sub topics covered in class XI.</li> <li>*apply Huygens Principle to draw the reflected and refracted wavefronts.</li> <li>* explain the need for coherent sources for interference.</li> <li>* list the conditions for sustained interference.</li> <li>*compare and contrast the interference pattern observed in YDSE and single slit diffraction.</li> <li>*sketch graph between intensity and fringe width for diffraction and interference of light in YDSE.</li> </ul>	<p>* Students will arrange the various components of the electromagnetic spectrum in terms of their wavelength / frequency.</p> <p>*students will create their own anagram for memorising the correct sequence of components of electromagnetic spectrum.</p> <p>*Using phet simulation, students will observe the characteristics of sustained interference.</p> <p>* Using phet simulation, students will infer need for coherent sources.</p> <p>*use phet simulation on interference to compare superposition of light waves with that of mechanical waves.</p> <p>*draw the graph between intensity and path difference for interference and diffraction due to single slit.</p> <p><b>Lab Activity-</b> Expt 7-To find the focal length of a convex mirror using a convex lens. (4 classes) Expt 8-To draw the IV</p>	<p>*Practice worksheet.</p> <p>*Weekly assignment questions from question bank and NCERT textbook exercise, board question papers.</p> <p>*Class Test / Assessment Worksheet.</p>



				Alternating Current <ul style="list-style-type: none"> <li>Electromagnetic Waves</li> <li>Wave Optics</li> </ul>
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<u>Month</u>	<u>Topic</u>	<u>Learning Outcomes</u>	<u>Activities</u>	<u>Assessment</u>
<b>October (6 classes) +(2 extra class)</b>	<b>Ray Optics and Optical Instruments</b>	Each student will be able to: *draw ray diagram to show refraction of light through a spherical refracting surface and a thin lens. *derive lens maker's formula and lens formula mathematically. *draw ray diagrams to show image formation by a simple and compound microscope, astronomical telescope. *deduce mathematically the expression for the magnifying power of the optical instruments. *apply the concepts and formulae logically to solve related conceptual questions and numerical.	*Each student will capture image of a naturally occurring phenomenon related to light depicting reflection/ refraction/ scattering/ dispersion or any other phenomenon and share in class with explanation. * discuss the difference between lens makers formula and lens formula. *compare refracting telescope with reflecting telescope (advantages / disadvantages)	*Practice worksheet.  *Weekly assignment questions from question bank and NCERT textbook exercise, board question papers. *Class Test / Assessment worksheet
<b>October (contd) (7 classes) +(1 extra class)</b>	<b>Dual Nature of Radiation and Matter</b>	Each student will be able to: *list the various methods of electron emission and define them. *explain the various observations made by Hertz and Lenard experiments *conclude that wave nature cannot explain photo electric effect. *graphically represent the conclusions from experimental set up on photoelectric effect. *state Einstein's laws of photoelectric emission *correlate with radiation's dual nature and infer that Matter possesses dual nature. *state de Broglie's hypothesis and derive the equation.	*Students will plot the of different graphs for photoelectric effect and variations of current with frequency, potential, kinetic energy, time of emission of electrons. *Watch edpuzzle video on the topic and answer the questions in it.	*Practice worksheet.  *Weekly assignment questions from question bank and NCERT textbook exercise, board question papers. *Class Test / Assessment worksheet.

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<u>Month</u>	<u>Topic</u>	<u>Learning Outcomes</u>	<u>Activities</u>	<u>Assessment</u>
<b>November (5 classes) +(3 extra class)</b>	<b>Electronic Devices</b>	<p>Each student will be able to</p> <ul style="list-style-type: none"> <li>*differentiate between conductors, insulators and semiconductors on the basis of conductivity and energy band diagram.</li> <li>*explain the formation of p type and n type semiconductors and pn junction diode.</li> <li>*draw circuit diagrams for characteristics of diode and graphically represent the variation of I with V.</li> <li>*draw circuit diagram and explain working of a diode as a rectifier.</li> </ul>	<p>*Students will -draw the energy band diagrams for p and n type semiconductors.</p> <p>*compare the circuit symbols of various special purpose diodes with their images.</p> <p>*make a list of electronic appliances at home where a voltage regulator might be used.</p> <p>*compare the IV graphs for semiconductors with that of conductors and decide whether they follow Ohm's law or not.</p>	<p>*Practice worksheet.</p> <p>*Weekly assignment questions from question bank and NCERT textbook exercise, board question papers.</p> <p>*Class Test/Assessment worksheet</p>
<b>November (5 classes)+(3 extra class)</b>	<b>Atoms and Nuclei</b>			
<b>November (5 classes)</b>	<b>Revision for Revision Test</b>	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>*list the various models for structure of atom.</li> <li>*explain the observations of alpha particle scattering experiment.</li> <li>*state the postulates of the Bohr's model for hydrogen atom.</li> <li>*mathematically derive the expressions for radius, velocity, and total energy of an electron in hydrogen atom.</li> <li>*draw energy level diagram for hydrogen atom.</li> <li>*write the equation for mass energy relation and mass defect.</li> <li>*differentiate between nuclear fission and fusion.</li> </ul>	<p>*Students will calculate energy corresponding to a particular energy state.</p> <p>*Draw the energy level diagram for hydrogen atom and name the various series of spectra.</p>	<p><b>Revision Test 21.11.2022- 30.11.2022</b></p> <ul style="list-style-type: none"> <li>• Electrostatics</li> <li>• Current Electricity</li> <li>• Magnetic Effects of Current and Magnetism</li> <li>• Electromagnetic Induction and</li> </ul>

				Alternating Current <ul style="list-style-type: none"> <li>• Electromagnetic Waves</li> <li>• Wave Optics</li> <li>• Ray Optics and Optical Instruments</li> <li>• Dual Nature of Radiation and Matter</li> </ul>
<b><u>Month</u></b>	<b><u>Topic</u></b>	<b><u>Learning Outcomes</u></b>	<b><u>Activities</u></b>	<b><u>Assessment</u></b>
December, January, February	Pre Board Exam, Revision		Lab Activity Investigatory Project Work	Pre Board Examination 28.12.2022- 18.1.2023 Whole Syllabus

## CHEMISTRY

Month	Topic Covered & No. of Periods	Learning outcomes	Activities	Assessments
March	<b>Solutions</b>  <b>No. of periods: 9</b>	<b>Each student will be able to:</b> <ul style="list-style-type: none"> <li>• Express concentration of different solutions in terms of normality, molarity, molality, mole fraction, mass fraction.</li> <li>• Solve numerical related to molarity, molality, mole fraction</li> <li>• State and explain Henry's Law.</li> <li>• State and explain Raoult's Law.</li> <li>• Compare between Henry's and Raoult's law.</li> <li>• Differentiate between ideal and non-ideal solutions, solutions with +ve and -ve deviations from Raoult's law.</li> <li>• Explain the term azeotropes.</li> <li>• Explain different colligative properties</li> </ul>	<ul style="list-style-type: none"> <li>• Hook activity- Picture prompt related to scuba diving followed by talk on Scuba Diving / Altitude Sickness/ Carbonated drinks followed by group discussion on Henry's Law and its applications (students' sharing experience related to the topics)</li> <li>• Hook activity on concept of boiling point.</li> <li>• Students' presentation on colligative properties (group activity)</li> <li>• <b>Case study</b> on colligative properties</li> </ul>	<ul style="list-style-type: none"> <li>• MCQ</li> <li>• Class Participation (Oral and Written)</li> <li>• Weekly Assignment / Worksheet (Submission of work)</li> <li>• Class Test</li> </ul>



April	Solutions  No. of periods: 1	<p>and derive their expressions.</p> <ul style="list-style-type: none"> <li>• Relate colligative properties with the molecular mass of the solute.</li> <li>• Draw graphical representations related to Raoult's Law and colligative properties.</li> <li>• Solve numerical related to laws, colligative properties and determination of molecular mass of the solute.</li> <li>• Solve numerical related to Abnormal molecular mass, Vant Hoff factor.</li> </ul>		
April Contd.	Haloalkanes and Haloarenes  No. of periods: 12	<p><b>Each student will be able to:</b></p> <ul style="list-style-type: none"> <li>• Define and classify halogenated compounds.</li> <li>• Draw the isomers for a given molecular formulae and write IUPAC names.</li> <li>• Apply IUPAC rules to name a given structure.</li> <li>• Write equations for the preparation of haloalkanes and haloarenes.</li> <li>• Apply Luca's test to differentiate between different alcohols.</li> <li>• Distinguish between the following mechanisms-<math>S_N2</math>, <math>S_N1</math> and E2, E1.</li> <li>• Compare the mechanisms-<math>S_N2</math>, <math>S_N1</math> and E2, E1.</li> <li>• Write equations for the chemical properties of haloalkanes.</li> <li>• Explain and write name reactions.</li> <li>• Compare the relative reactivity of haloalkanes and haloarenes towards nucleophilic substitution reactions.</li> <li>• Write equations for the chemical properties of haloalkanes and haloarenes-nucleophilic &amp; electrophilic substitution reactions.</li> </ul>	<ul style="list-style-type: none"> <li>• Hook Activity</li> </ul> <p>Initiate discussion on the medicine (chlorinated compound) exported by India to different countries as a preventive measure to contain the spread of Corona Virus in 2020.</p> <ul style="list-style-type: none"> <li>• Prepare a concept map on classification of halogenated compounds.</li> <li>• Ball &amp; stick model activity to judge stereochemistry of compounds.</li> <li>• Students' activity (Chirality check for compounds- individual using 3-D models)</li> <li>• <b>Art Integration Activity: (Role Play)</b></li> </ul> <p>Comparison of the reactivity of different types of alkyl halides towards <math>S_N2</math> and <math>S_N1</math> mechanisms.</p> <ul style="list-style-type: none"> <li>• <b>Case study</b> on chemical properties (<math>S_N2</math> and <math>S_N1</math> mechanisms) and polyhalogenated compounds.</li> <li>• <b>Lab Activity</b></li> </ul> <p><b>Instructions and Demonstration of Experiment (Redox Titration) (4 Periods)</b></p> <p>Determine the molarity and strength of the given <math>KMnO_4</math> solution by titrating it against <math>M/40</math></p>	<ul style="list-style-type: none"> <li>• MCQ</li> <li>• Class Participation (Oral and Written)</li> <li>• Weekly Assignment / Worksheet (Submission of work)</li> <li>• <b>Art Integration</b></li> <li>• Class Test</li> </ul>

		<ul style="list-style-type: none"> <li>Predict the structure of the products in the chemical reactions of halogenated compounds.</li> <li>Solve interconversions, reasoning and application-based questions related to haloalkanes and haloarenes.</li> <li>Know and explain about uses of commercially important compounds poly-halogen compounds.</li> </ul>	Mohr's Salt solution. You are required to prepare 25 ml of M/40 Mohr Salt solution.	
<b>April contd.</b>	<b>Alcohols, Phenols and Ethers</b>  <b>No. of periods: 5</b>	<b>Each student will be able to:</b> <ul style="list-style-type: none"> <li>Name alcohols, phenols and ethers according to IUPAC nomenclature.</li> <li>Draw the isomers for a given molecular formulae.</li> <li>Write equations for the preparation of alcohols, phenols and ethers.</li> </ul>	<ul style="list-style-type: none"> <li>Students will be required to collect few items used at home containing alcohol as a solvent for initiating discussion on the nature of the compounds involved.</li> <li>Draw concept map for the classification of monohydric alcohols.</li> <li>Talk on alcohol based and non-alcoholic sanitizers and their effectiveness.</li> </ul>	<ul style="list-style-type: none"> <li>MCQ</li> <li>Class Participation (Oral and Written)</li> <li>Weekly Assignment / Worksheet (Submission of work)</li> </ul>
<b>May</b>	<b>Alcohols, Phenols and Ethers contd.</b>  <b>No. of periods: 9</b>	<b>Each student will be able to:</b> <ul style="list-style-type: none"> <li>Compare the acidity of different types of alcohols.</li> <li>Solve equation-based questions on the preparation of aliphatic and aromatic alcohols.</li> <li>Solve interconversions related to alcohols and phenols.</li> <li>Explain the name reactions and their mechanism (Reimer Tieman reaction, Williamsons Synthesis, Kolbe reaction).</li> <li>Distinguish between different types of alcohols based on Luca's test and also write the reactions involved.</li> <li>Solve equation-based questions on the chemical properties of aliphatic and aromatic alcohols and ethers</li> </ul>	<ul style="list-style-type: none"> <li>Write chemical tests and equations to distinguish between the given pair of compounds-Iodoform test and for the functional group in organic compounds: alcoholic (Na metal test) and phenolic group (Coupling reaction)</li> <li><b>Case study</b> on acidity and other properties of alcohols.</li> <li>Simulator activity (Tests for functional group- Alcohols, Phenols and Iodoform test)</li> </ul>	<ul style="list-style-type: none"> <li>MCQ</li> <li>Class Participation (Oral and Written)</li> <li>Weekly Assignment / Worksheet (Submission of work)</li> <li>Class Test</li> </ul>

		(Anisole). <ul style="list-style-type: none"> <li>Solve interconversions related to alcohols, phenols &amp; ethers.</li> </ul>		
<b>May</b>  <b>Contd..</b>	<b>Biomolecules</b>  <b>No. of periods: 9</b>	<b>Each student will be able to:</b> <ul style="list-style-type: none"> <li>Define and classify carbohydrates and monosaccharides.</li> <li>Explain the chemical reactions of glucose for the structure determination of glucose.</li> <li>Explain D &amp; L configuration in monosaccharides.</li> <li>Explain the cyclic structure of glucose and fructose.</li> <li>Explain the terms anomers, epimers and mutarotation.</li> <li>Draw the Haworth and Fischer projections of glucose and fructose, oligosaccharides and polysaccharides.</li> <li>Explain the terms-amino acids, peptide bond, Proteins, zwitter ion and denaturation.</li> <li>Explain the 1<sup>o</sup>,2<sup>o</sup>,3<sup>o</sup>,4<sup>o</sup> structures of proteins.</li> <li>Differentiate between fibrous and globular proteins.</li> <li>Explain the term - Nucleic acids: their composition, nucleoside, nucleotide and phosphodiester bond.</li> <li>Differentiate between RNA &amp; DNA.</li> <li>Explain different types of bonds in biomolecules (glycosidic bond, peptide bond and phosphodiester bond).</li> <li>Explain the function of vitamins, their deficiency diseases &amp; function of hormones.</li> </ul>	<ul style="list-style-type: none"> <li>General discussion on role of living cell in the regulation of energy cycle and importance of biomolecules (Mentimeter Activity-Biomolecules)</li> <li>Discussion on denaturation of protein (Egg albumin)</li> <li>Drawing projection formulae of Glucose, Fructose, oligosaccharides and polysaccharides.</li> <li>Watch animations on the structures of biomolecules (stick / line / spherical / space filling / rotating models).</li> <li><b>Case study</b> on carbohydrates and proteins</li> <li>Simulator activity (Tests for carbohydrates and proteins)</li> </ul>	<ul style="list-style-type: none"> <li>MCQ</li> <li>Class Participation (Oral and Written)</li> <li>Weekly Assignment / Worksheet (Submission of work)</li> <li>Class Test</li> <li><b>Weekly Test I (27.05.22)</b></li> <li>✓ Solutions</li> <li>✓ Haloalkanes and Haloarenes</li> </ul>
<b>July</b>	<b>Electrochemistry</b>	<b>Each student will be able to:</b>		

	<p><b>No. of periods: 12</b></p>	<ul style="list-style-type: none"> <li>• Explain the term redox reactions and give examples.</li> <li>• Describe the construction and working of an electrochemical cell (Daniel cell) and write the cell reactions and representation.</li> <li>• Differentiate between electrolytic and electrochemical cells.</li> <li>• Define and explain measurement of electrode potential of an electrode.</li> <li>• Define emf, standard electrode potential and electrochemical series.</li> <li>• Derive Nernst equation and relation between Gibb's energy change &amp; emf of a cell.</li> <li>• Solve numerical related to standard electrode potential, electrochemical series, Nernst equation, relation between <math>\Delta G</math> and emf.</li> <li>• Define Ohm's law.</li> <li>• Define and derive units for resistance, resistivity, conductance, conductivity, molar</li> <li>• Define and relate molar &amp; specific conductance in electrolytic solutions.</li> <li>• Explain the variation of molar conductivity with dilution.</li> <li>• State and explain Kohlrausch law and concept of electrolysis.</li> <li>• Predict the product of electrolysis.</li> <li>• Solve numerical related to Specific, molar conductivity and Kohlrausch and Faraday's laws.</li> <li>• Explain the construction and working of the <math>1^0</math> cells, <math>2^0</math> cells and fuel cells.</li> <li>• Discuss the mechanism of corrosion writing the chemical equations involved at the respective electrodes.</li> </ul>	<ul style="list-style-type: none"> <li>• Drawing and labeling/ Setting up of an Electrochemical cell having different metal electrodes in the combination (For measurement of Electrode Potential)</li> <li>• Use PhET and java lab simulation activities to explore concept of electrochemical cell, measurement of electrode potential and applications of electrochemical series.</li> <li>• <b>Students' Activity</b>-Students will be asked to construct an electrochemical cell using different electrodes and fruits / vegetables (lemon, orange, potato etc) and compare the cell output.</li> <li>• Study the variation of cell potential of Daniel cell with change in the concentration of both the electrolytes at room temperature/ varied temperature. (Project topic)</li> <li>• Hook activity on concept on conductivity.</li> <li>• Students' presentation on cells and batteries. (Group activity)</li> <li>• <b>Case study</b> on electrochemical cell and electrolysis.</li> <li>• <b>Lab Activity (Volumetric Analysis)</b> Determine the molarity and strength of the given <math>\text{KMnO}_4</math> solution by titrating it against M/40 Mohr's Salt solution. <b>(4 Periods)</b> Determine the strength of the given <math>\text{KMnO}_4</math> solution by titrating it against M/40 Oxalic acid solution. <b>(4 Periods)</b></li> </ul>	<ul style="list-style-type: none"> <li>• Class Participation (Oral and Written)</li> <li>• Weekly Assignment / Worksheet (Submission of work)</li> <li>• Class Test</li> </ul>
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July Contd..	Chemical Kinetics No. of periods: 8	<p><b>Each student will be able to:</b></p> <ul style="list-style-type: none"> <li>Define and distinguish between average and instantaneous rate.</li> <li>Express rate in terms of reactants and products &amp; Rate law.</li> <li>Explain the dependence of rate on factors like concentration, temperature, volume and catalyst.</li> <li>Distinguish between elementary and complex reactions.</li> <li>Discuss the mechanism of complex reactions.</li> <li>Differentiate between order and molecularity of a reaction.</li> <li>Derive integrated rate equations for zero &amp; first order reaction &amp; solve numerical related to them.</li> <li>Analyses the graphs for determination of the rate constant.</li> <li>Define the terms- Half-life period &amp; solve numerical related to first order kinetic equation and half-life.</li> <li>Explain the postulates of collision theory.</li> <li>Derive Arrhenius equation and solve related numerical.</li> </ul>	<ul style="list-style-type: none"> <li>Students will be asked about the different types of chemical changes/ they observe around them &amp; in what respects are they different from each other.</li> <li><b>Students' Activity</b>-Study the effect of concentration and temperature on the rate of reaction between sodium thiosulphate and HCl. (Project topic)</li> <li>Compare the graphical representations for average and instantaneous rate of reaction, zero and first order reactions.</li> <li>Students' presentation on collision theory and Arrhenius equation (Group activity)</li> <li><b>Case study</b> on kinetics of zero and first order reactions.</li> <li><b>Lab Activity (Volumetric Analysis)</b> Determine the percentage purity of the given sample of <math>\text{KmnO}_4</math>, 0.8 g of which has been dissolved per litre of the solution. You are required to prepare 25 ml of M/40 Mohr salt solution. Determine the percentage purity of the given sample of <math>\text{KMnO}_4</math>, 1.6 g of which has been dissolved per litre of the solution. You are required to prepare 25 ml of M/40 Oxalic acid solution. <b>(4 Periods)</b> <b>Qualitative analysis</b> instructions for the classification and the chemical tests of acidic radicals (anions) and basic radicals (cations). To determine an anion and a cation present in the given salt samples. (Group 1 – Pb salts) <b>(4 Periods)</b></li> </ul>	<ul style="list-style-type: none"> <li>Class Participation (Oral and Written)</li> <li>Weekly Assignment / Worksheet (Submission of work)</li> <li>Class Test</li> </ul>
August	Aldehydes, Ketones and Carboxylic Acids	<p><b>Each student will be able to:</b></p> <ul style="list-style-type: none"> <li>Name aldehydes, ketones and</li> </ul>	<ul style="list-style-type: none"> <li>Hook activity using food item for initiating discussion on the topic.</li> </ul>	<ul style="list-style-type: none"> <li>Class Participation (Oral and Written)</li> </ul>

	<b>No. of periods: 14</b>	<p>carboxylic acids according to IUPAC nomenclature.</p> <ul style="list-style-type: none"> <li>• Draw the isomers for a given molecular formulae.</li> <li>• Write equations for the preparation of preparation of ethanal, acetone &amp; ethanoic acid.</li> <li>• Explain the equations for name reactions (Stephen, Rosenmund, Clemmenson reduction, Cannizzaro, Aldol condensation, HVZ &amp; Boradine Hunsdiecker reaction).</li> <li>• Compare the reactivity of aldehydes and ketones towards nucleophilic addition reactions.</li> <li>• Discuss and apply the mechanism for Aldol condensation and reactions involving Grignard reagent.</li> <li>• Distinguish between aldehydes and ketones (DNP, Tollen's, Fehling and Iodoform test) giving the equations involved.</li> <li>• Explain the test for carboxylic group (sodium bicarbonate test, Esterification) and write the equations involved.</li> <li>• Compare the acidity of different types of acids.</li> <li>• Solve interconversions and structural elucidation questions related to aldehydes, ketones &amp; carboxylic acids.</li> </ul>	<ul style="list-style-type: none"> <li>• Brainstorming for mechanism involved in Nucleophilic addition, Aldol and Cross Aldol.</li> <li>• Chemical tests for the Aldehydic, Ketonic groups present in the organic compounds-discussion using video links.</li> <li>• <b>Lab Activity (Qualitative analysis)</b> To determine an anion and a cation present in the given salt samples. (Zero Group – <math>\text{NH}_4^+</math> salts) (Group 3 – Al salts) <b>(4 Periods)</b> To determine an anion and a cation present in the given salt samples. (Group 5 –Ba, Sr, Ca salts) <b>(4 Periods)</b> To determine an anion and a cation present in the given salt samples. (Group 4 –Zn salts) <b>(4 Periods)</b></li> <li>• Hook activity for initiating discussion on acids.</li> <li>• Simulator activity (Tests for Carboxylic functional group)</li> <li>• Chemical tests for Carboxylic functional group present in the organic compounds- discussion using using video and simulator links.</li> <li>• <b>Case study</b> on properties of aldehydes and ketones.</li> </ul>	<ul style="list-style-type: none"> <li>• Weekly Assignment / Worksheet (Submission of work)</li> <li>• Class Test</li> <li>• <b>Weekly Test II (05.08.22)</b></li> <li>✓ Solutions</li> <li>✓ Haloalkanes and Haloarenes</li> <li>✓ Alcohols, Phenols and Ethers</li> <li>✓ Biomolecules</li> </ul>
<b>August Contd..</b>	<b>Amines</b> <b>No. of periods: 5</b>	<p><b>Each student will be able to:</b></p> <ul style="list-style-type: none"> <li>• Classify amines as primary, secondary and tertiary.</li> <li>• Name aliphatic and aromatic Amines according to common and IUPAC</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion on the composition of Nicotine (in Tobacco) and Caffeine (in tea and coffee).</li> <li>• Simulator activity (Tests for amines)</li> </ul>	<ul style="list-style-type: none"> <li>• Class Participation (Oral and Written)</li> </ul>

		<p>nomenclature.</p> <ul style="list-style-type: none"> <li>• Draw the isomers for a given molecular formulae.</li> <li>• Write the chemical equations for various methods of preparation of Ethylamine, Aniline and Diazonium salts.</li> <li>• Explain the reactions for the chemical properties of amines.</li> <li>• Explain name reaction (Hoffmann Ammonolysis &amp; Hoffmann Bromamide reaction).</li> <li>• Distinguish between 1<sup>o</sup>, 2<sup>o</sup> &amp; 3<sup>o</sup> amines (Hinsberg test).</li> </ul>	<ul style="list-style-type: none"> <li>• Write chemical tests and equations to distinguish between different types of amines- Hinsberg's test and for the functional group in organic compounds: aniline group (Coupling Reaction-Dye test)</li> <li>• <b>Lab Activity</b> To determine an anion and a cation present in the given salt samples. (Group 6 – Mg salts) <b>(4 Periods)</b></li> </ul>	<ul style="list-style-type: none"> <li>• Weekly Assignment / Worksheet (Submission of work)</li> </ul>
Sept.	<b>Amines contd.</b> <b>No. of periods: 2</b>	<p><b>Each student will be able to:</b></p> <ul style="list-style-type: none"> <li>• Discuss the importance of Diazonium salts in the synthesis of a series of aromatic compounds.</li> <li>• Solve interconversions, reasoning and application-based questions related to amines.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Case study</b> on properties of aliphatic and aromatic amines.</li> <li>• <b>Lab Activity</b> To determine an anion and a cation present in the given salt samples. (Unknown salt) <b>(4 Periods)</b></li> </ul>	<ul style="list-style-type: none"> <li>• Class Participation (Oral and Written)</li> <li>• Weekly Assignment / Worksheet (Submission of work)</li> <li>• Class Test</li> </ul>
Sept. Contd..	<p><b>d and f-Block Elements</b>  <b>No. of periods: 4</b></p> <p><b>Revision</b>  <b>No. of periods: 4</b></p>	<p><b>Each student will be able to:</b></p> <ul style="list-style-type: none"> <li>• Justify the position of d &amp; f block elements in the periodic table.</li> <li>• Write electronic configuration &amp; predict the common characteristics of the d and f block elements.</li> <li>• Explain the periodic trends in d block elements.</li> <li>• Relate the general characteristics and properties of d and f block elements with their electronic configuration.</li> <li>• Discuss the consequences of f-block elements w.r.t lanthanide contraction.</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion on position and electronic configuration and unique characteristics of d-block elements.</li> <li>• Relate screening effect to class seating arrangement to understand and discuss Lanthanoid contraction-reasons and consequences.</li> <li>• Discussion on position and electronic configuration and unique characteristics of f-block elements.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Mid Term Examination</b> <b>(21.09.22 to 30.09.22)</b></li> <li>✓ Solutions</li> <li>✓ Electrochemistry</li> <li>✓ Chemical Kinetics</li> <li>✓ Haloalkanes and Haloarenes</li> <li>✓ Alcohols, Phenols and Ethers</li> <li>✓ Biomolecules</li> </ul>

Oct	<b>d and f-Block Elements contd.</b>  <b>No. of periods: 5</b>	<b>Each student will be able to:</b> <ul style="list-style-type: none"> <li>Discuss the methods of preparation and chemical properties of <math>\text{KMnO}_4</math> &amp; <math>\text{K}_2\text{Cr}_2\text{O}_7</math> by writing the reactions involved.</li> <li>Draw and explain the structures of manganate and dichromate ions involved.</li> <li>Give a comparative account of the lanthanoids and actinoids with respect to their electronic configurations, oxidation states and chemical behaviour.</li> </ul>	<ul style="list-style-type: none"> <li>Draw the structures of dichromate, chromate, permanganate and manganate ions.</li> <li>Write chemical equations for the oxidizing nature of <math>\text{KMnO}_4</math> &amp; <math>\text{K}_2\text{Cr}_2\text{O}_7</math>.</li> <li>Make a comparative account of the lanthanoids and actinoids</li> <li><b>Case study</b> on properties of d and f-block elements.</li> <li><b>Lab Activity</b> Determination of the functional group in the given sample of organic compound. (-COOH, -OH, -CHO. -CO- groups) <b>(4 Periods)</b></li> </ul>	<ul style="list-style-type: none"> <li>Class Participation (Oral and Written)</li> <li>Weekly Assignment / Worksheet (Submission of work)</li> <li>Class Test</li> </ul>
	<b>Coordination Compounds</b>  <b>No. of periods: 8 (+2 extra)</b>	<b>Each student will be able to:</b> <ul style="list-style-type: none"> <li>Explain the terms related to complexes.</li> <li>Name mononuclear coordination compounds according to IUPAC.</li> <li>Define different types of structural and stereo-isomerism in coordination compounds.</li> <li>Discuss the nature of bonding in coordination compounds in terms of Werner's theory, VBT &amp; CFT.</li> <li>Differentiate between primary and secondary valency.</li> <li>Explain the formation of high spin and low spin complexes.</li> <li>Explain the hybridisation of the central metal atom/ion in complexes based on magnetic properties.</li> <li>List the limitations of Werner's theory and VBT.</li> <li>Draw crystal field splitting patterns for tetrahedral and octahedral complexes.</li> <li>Explain the properties of complex compounds-colour, type of complex</li> </ul>	<ul style="list-style-type: none"> <li>Discussion on the term complexes.</li> <li>Discussion on how alums / Mohr salt are different from potassium ferro cyanide.</li> <li>Draw the structures of isomers of a given complex.</li> <li>Draw VBT and CFT diagrams to explain the magnetic properties and colour of complexes.</li> <li><b>Case study</b> on properties of coordination compounds.</li> <li><b>Lab Activity</b> Determination of the functional group in the given sample of organic compound. (Phenolic and Amine group) <b>(4 Periods)</b></li> </ul>	<ul style="list-style-type: none"> <li>Class Participation (Oral and Written)</li> <li>Weekly Assignment / Worksheet (Submission of work)</li> <li>Class Test</li> </ul>



		etc using CFT. • Discuss the importance and applications of coordination compounds in daily life.		
Nov	<b>Revision</b> <b>No. of periods: 10</b>  <b>Revision Test</b>		• <b>Lab Activity</b> To separate the coloured components present in the given mixture of ink by ascending paper chromatography and also calculate $R_f$ values.  Determination the presence of carbohydrates and proteins in the given food sample. <b>(4 Periods)</b>	• <b>Revision Test (21.11.22 to 30.11.22)</b> ✓ Solutions ✓ Electrochemistry ✓ Chemical Kinetics ✓ d and f-Block Elements ✓ Haloalkanes and Haloarenes ✓ Alcohols, Phenols and Ethers ✓ Aldehydes, Ketones and Carboxylic Acids ✓ Biomolecules
Dec & Jan	<b>Revision and Exams</b>		• <b>Lab Activity</b> Project Work	• <b>Pre-Board Examination (28.12.22 to 30.12.22, 12.01.23 to 18.01.23)</b> ✓ Whole Syllabus <b>(10 units)</b>

## Class : XII Mathematics

Month	No. of Periods/ topics covered	Learning outcome	Activities	Assessment
March- 9 Days	<p>Chapter 5 - Continuity and Differentiability</p> <p>*Chain Rule, product Rule and Quotient Rule – Recapitulations (1 day)</p> <p>*Implicit and Inverse trigonometric function Derivatives (3 days)</p> <p>*Logarithmic Differentiation(5 days)</p>	<p>Each child will be able to</p> <p>*apply the concept of continuity to check whether a function is continuous or not</p> <p>*recall the chain , quotient, product rule</p> <p>*find the derivative of inverse Trigo functions</p> <p><b>**perceive the concept of Logarithmic differentiation &amp; parametric function</b></p>	<p>*Ex 5.3 and Ex 5.5 - Few Questions will be done in the class.</p> <p>*Students will read the given flowchart and create their own once the topic is done</p> <p>*Students will read the solved examples of NCERT</p> <p>*Assignment containing questions from exemplar and previous board paper will be given and Level 2 and level 3 questions will be done in the class</p> <p>Students will be asked to solve the questions from this link</p> <p><a href="http://epathshala.nic.in/watch.php?id=606">http://epathshala.nic.in/watch.php?id=606</a></p>	<p>Through small tests in fundamentals</p> <p>Class work</p> <p>Home work</p> <p>Class test- Logarithmic Differentiation</p> <p>Google Form</p> <p>Oral test</p> <p>Oral Questioning will be done to check the understanding of the concept</p>

<p>April (18 Days)</p>	<p>Chapter 5 - Continuity and Differentiability Continued</p> <p>*Parametric Differentiation(1 day)</p> <p>*Higher order Derivatives(2 days)</p> <p>*Continuity of a function(3 days)</p> <p>*Differentiability(1 day)</p> <p>Assignment (1 day)</p>	<p>Each child will be able to</p> <ul style="list-style-type: none"> <li>*recall the properties of logarithms</li> <li>*differentiate the parametric form</li> <li>*find the higher order derivative of functions</li> <li>*recall the concept of limits</li> <li>*define a continuous function</li> <li>*apply the concept of continuity to check whether a function is continuous or not</li> </ul>	<p>Links of videos - shared with them to watch and understand the concept</p> <p>Interesting Assessment activities will be done in the class and few will be given as HW such as kahoot, quizizz, pose games to keep them involved with the content.</p> <p>5 marker short test will be given to the students during the class to check their understanding of the concept.</p> <p>*Students will read the given flowchart</p> <p>*Students will read the solved examples of NCERT</p> <p>*Quizzes</p> <p>* Assignment based on continuity and differentiability</p> <p>* NCERT Ex 5.6, 5.7 and Misc exercise will be done in the class.</p>	<p>*Classwork and Homework done on the regular basis</p> <p>*Small test in fundamentals</p> <p>*Quizizz</p> <p>* Oral Discussion</p> <p>*Oral Questioning will be done to check the understanding of the concept using AMP technique</p> <p>*10 Marker Google form will be given to evaluate the learning of concept</p> <p>*Assignment based on Continuity and Differentiability will be assigned to the students in class and Level 1 &amp; 2 questions will be assessed through the work done in the worksheets</p> <p><b>Activity</b> Art Integration Activity- Funnier side of exponential and logarithmic function</p>
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	<p>Chapter 6 - Application of Derivatives Increasing Decreasing Function(3 days)</p> <p>Tangents and Normal (3 days- Already done)</p> <p>Rate of Change(2 Days) Revision of Determinants</p>	<p>*recall the concept of rate of change of variable *identify the function to be <math>\uparrow</math> and <math>\downarrow</math></p> <p>*find the intervals when the function is increasing or decreasing. * find the rate of change</p> <p>*recall the relation of derivative at a point with the slope of tangent *equation of tangent and normal</p>	<p>Analyse limit of a function <math>f(x)</math> at <math>x=c</math> and check the continuity at that point.</p> <p>Assignment and Formulae discussed.</p> <p>NCERT and Assignment discussed in class</p> <p>Ex 6.1 and 6.2 will be done in the class.</p> <p>5 marker short test will be given to the students during the class to check their understanding of the concept.</p> <p>*Students will read the given flowchart</p> <p>*Students will read the solved examples of NCERT</p> <p>*Quizzes</p> <p>* Assignment based on continuity and differentiability</p>	<p>Oral Questioning</p> <p>Assignments</p> <p>Google forms based on Application of Derivatives will be given for self evaluation</p> <p>Weekly test will be conducted to assess the learning of the concept</p>
May (18 days)	<p>Chapter 6 - Application of Derivatives</p> <p>Maxima Minima (8 days)</p> <p>Chapter 7- Integration</p> <p>Introduction- *Difference between integration and differentiation(1 day)</p> <p>*Integration by substitution (3</p>	<p>Each child will be able to</p> <p>*calculate the point of max/min in a given interval *differentiate btw absolute max/min and local max/min *apply the theory of max/min to solve word problems *evaluate the approximate values using the concept of derivatives</p> <p>define the concept of anti derivative *learn the integral of basic functions by the method of inspection</p> <p>*learn the integral of basic functions by</p>	<p>Art Integration: Construction of an open box of maximum volume from a given rectangular sheet by cutting equal square pieces from each corner. NCERT Ex 6.5 ,7.1, 7.2, 7.3 and 7.4- Few questions will be done in the class and Assignment will be discussed in class through</p> <p>Links of videos - shared with them to watch at their own pace</p> <p>Interesting Assessment activities done in the class such as kahoot, quizizz, pose games to</p>	<p>Oral Questioning will be done to check the understanding of the concept through an AMP box</p> <p>*10 Marker Google form will be given to evaluate the learning of concept</p> <p>* Worksheet</p> <p>*Formula Test</p> <p>Assessment through an</p>

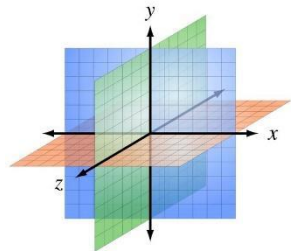
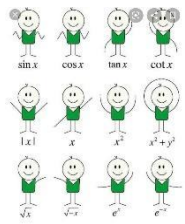
	day)  *Integration of Trigonometric function (4 days)  *Special Integrals (2 days)	the method of inspection  *integrate by substitution  *apply the method of substitution to solve problems of integration by using trigonometric identities	keep them involved with the content.	activity based on Maxima Minima  Weekly Test 06.05.2022  Syllabus: Determinants,  Continuity and Differentiability  AOD: Tangent and Normals
July(20 days)	Chapter 7 - Integrals (13)	Each child will be able to *define the concept of anti derivative *learn the integral of basic functions by the method of inspection *apply the method of substitution of substitution to solve problems of integration by using trigonometric identities *derive the solution of special integrals *apply the method of by parts and partial fractions to solve problems *perceive the concept of definite integral of a function *apply the properties of *definite integrals in solving problems	NCERT – Chapter 7 Important Questions Will be done in the class and Assignment will be discussed in class through Google Meet  Solve assignment- Integration  Students will watch the relevant video at home  Formulae sheet will be shared with the students  Activity- Evaluate the definite Integral as limit of sum and verify by actual Integration.	Through small tests in fundamentals Google Form  Practice Paper  Oral Questioning  Weekly Test- 15.07.22  Syllabus  Chapter 6- Application of Derivatives  Chapter 7- Integrals (Indefinite)

July(20 days)	Chapter 8- Application of Integration ( 7 Days)	<p>Each child will be able to:</p> <ul style="list-style-type: none"> <li>*draw the curve</li> <li>*find the point of intersection</li> <li>*identify the area to be calculated</li> <li>*calculate the area bounded by the curves such as lines, ellipse, parabola, circle.</li> </ul>	<p>Solve assignment- Integration Application of Integrals</p>	<p>Oral Questioning</p> <p>Submission of work</p> <p>Class participation</p> <p>5 Marker Class test will be conducted evaluate the learning of concept</p>
August (19 days)	Chapter 9- Differential Equations (8 Days)	<p>Each child will be able to</p> <ul style="list-style-type: none"> <li>*define a differential equation. Its order and degree</li> <li>*form the differential equation whose general solution is given</li> <li>*solve the differential equation using the method of separating variables</li> <li>*define a homogenous differential equation</li> <li>*identify a linear differential equation</li> <li>*solve a linear differential equation (<math>dy/dx + Py=Q</math>)</li> </ul>	<p>Solve Exercises from chapter 9 (NCERT)</p> <p>Solve assignment- Differential Equations</p> <p>Students will practice solved examples of NCERT at home which will help in further solving questions from Exercises</p> <p>Students will solve Exercises from chapter 9 (NCERT)</p> <p>Formulae sheet will be shared with the students</p> <p>NCERT – Students will watch the relevant video at home</p> <p>Board Paper Questions will be practiced in class</p>	<p>Through small tests in fundamentals Google Form</p> <p>Assessment through Google Forms, Oral Questioning, Work sent in the google classroom.</p> <p>Online Quiz: MCQs 10QsX1m=10m</p>

August (19 days)	Chapter 2 - Inverse Trigonometric Functions(4)	Each child will be able to  *evaluate the domain / range of inverse trigo functions  *perceive the concept of principle branches  *sketch the graphs of inverse trigo functions.	Links of videos - shared with them to watch at their own pace	Oral Questioning  Assignments  Homework given and discussed in the class  Google quiz - Inverse Trigonometry
August (19 days)	Chapter- Linear Programming Problem (4 Days)	Each child will be able to  *define an L.P.P, objective function, constraints, feasible region, feasible solution  *find the feasible region.  *solve an L.P.P using Corner point method	NCERT – Students will watch the relevant video at home read Ncert examples at home  Assignment <ul style="list-style-type: none"> <li>Linear Programming Board Questions</li> </ul> Experiential Learning-Formulate a linear programming problem to manufacture chocolates and attain maximum profit.	Oral Questions  Google Form for diagnosing the learning gaps
August (19 days)	Chapter- 13 Probability (3 days)	Each child will be able to *define probability, random exp, event, sample space *recall the fundamental principle of addition and multiplication	Experiential Learning- *Identify the role of probability in Casino games * Probability of Patients recovering from Covid 19 in Delhi in August 2020	Oral Questioning  Submission of work  Class participation
September (22 days)	Chapter 13 Probability (5 Days)	Each child will be able to *list the various types of events *differentiate btw independent and mutually exclusive events *perceive the concept of reverse probability *learn the Baye's theorem *define a random variable **apply the concept of random variable in finding mean and variance	NCERT Questions based on Probability will be done in the class  Students will watch the relevant video at home  Assignment on Probability given to the students  Experiential Learning- *Identify the role of	Through small tests in fundamentals Venn – Diagrams

			<p>probability in Casino games  * Probability of Patients recovering from Covid 19 in Delhi in August 2020</p> <p>Activity- students will explain the computation of conditional Probability</p>	
September (22 days)	<p>Revision for Mid term Examination (5)</p> <p><u>Chap 2-</u> Inverse Trigonometric Functions</p> <p><u>Chap-3</u> Matrices</p> <p><u>Chap-4</u> -Determinants</p> <p><u>Chap5</u>-Continuity and Differentiation</p> <p><u>Chap6</u>-App of Derivatives</p> <p><u>Chap7</u>-Integrals</p> <p><u>Chap8</u>-App of Integrals</p> <p><u>Chap 9</u>-Differential Equations</p>	Each student will be able to: recall, revise, state and apply the properties, theorems and formulae from the mentioned topics and clarify their doubts, if any.	<p>Students will recall, revise and apply the mentioned topics and clarify their doubts, if any.</p>	<p><u>Mid Term Examination-</u>  <u>(21.02.2022-30.09.2022)</u>  <u>Syllabus</u></p> <p><u>Chap 2-</u> Inverse Trigonometric Functions</p> <p><u>Chap-3</u> Matrices</p> <p><u>Chap-4</u> -Determinants</p> <p><u>Chap5</u>-Continuity and Differentiation</p> <p><u>Chap6</u>-App of Derivatives</p> <p><u>Chap7</u>-Integrals</p> <p><u>Chap8</u>-App of Integrals</p> <p><u>Chap 9</u>-Differential equations</p>
October (13 days)	Concept- Vectors (5 Days)	<p>Each child will be able to</p> <ul style="list-style-type: none"> <li>*define a vector</li> <li>differentiate btw *vector and scalar</li> <li>list the various types of vectors</li> <li>*differentiate btw direction cosines/ratios</li> <li>*define scalar product of vectors</li> <li>*apply the scalar product concept in solving questions</li> <li>*define vector product of vectors</li> <li>*apply the vector</li> <li>* product concept in solving problems</li> <li>*evaluate the projection of a vector on another vector</li> <li>*find scalar triple product of given vectors.</li> </ul>	<p>Read Ncert examples at home</p> <p>Assignment</p> <ul style="list-style-type: none"> <li>• Vectors</li> </ul> <p>Question from last year Board Exams</p> <p>Experiential Learning- Physical significance of cross and dot product.</p> <p>Solving Questions</p> <p>Activity- To verify that the angle in a semi circle is right angle.</p>	<p>Through Google Forms</p> <p>Practice Paper</p>



October (13 days)	Chapter 11- Three Dimensional Geometry (4 Days)	<u>Three Dimensional Geometry</u> *recall the concept of 3-D *list the various forms of line *apply the various equations of line in solving problems *define skew lines *calculate the distance btw two lines-skew and parallel lines *list various equations of plane ***angle between two lines, two planes, line and a plane	Activity- To verify that the angle in a semi circle is right angle.  Students will watch Don't memorise videos and NROER videos  Research about skew lines Lab activity- Distance between two points.  visualization of Three Dimensional Geometry 	Through small tests in fundamentals  Google Form  Oral Questioning  Assignments  Board Year Paper Practice  Practice Paper
October (13 days)	Concept-Relation and Function (4 Days)	each child will be able to  *recall the definition of a function and relation *list the various types of relations *prove a relation to be an equivalence relation *evaluate the domain / range of given functions *perceive the concept of composite functions *evaluate the inverse of a function	Experiential Learning- Students will demonstrate a function which is neither one one nor onto  Art Integration: Various forms of functions  Dancing Math: 	Assignment Relation Functions  Questions from last year Board Paper  Discussion  Lab activity(5 Marks)
November, December, January	*Revision of the concepts, *Revision Exam, *Preboard Examination *Practical's (Complete Syllabus)- NCERT	Each child will be solving the important questions from NCERT, Exemplar and the assignment	Solving questions from previous years board question papers  Sample Papers based on new pattern	Revision Test (21.11.2022- 30.11.2022)  Preboard Exam (28.12.2022- 18.01.2023)

	book 1 and book 2			<p>Small tests in fundamentals</p> <p>Oral Questioning,</p> <p>Assignments,</p> <p>Board Year Paper Practice</p> <p>Sample Papers</p>
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### COMPUTER SCIENCE

Month/ T. Days No of Periods Topics/Subtopics	<u>Topics/subtopics</u>	Learning Outcomes	Activities/ Assignments	Assessment
March	<p><b>Bridge Course- (5 periods)</b></p> <p><b>Syntaxes-loops, if...else</b></p> <p><b>Revision Class XI-</b> Lists, Tuples, Dictionaries, Strings-functions and applications-3 days</p> <p><b>Revision: Functions:</b> (8 periods) scope, parameter passing, mutable/immutable properties of data objects, pass arrays to functions, return values, functions using libraries: mathematical, and string functions. 8-9 days</p>	<p>Each child will be able to- =&gt;be able to find syntax errors in if...else code/ loops =&gt;be able to state output of programming codes =&gt;be able to solve computing problems based on Lists, Tuples and dictionaries =&gt;be able to define functions =&gt;create functions using Python Code, pass arguments and return values. =&gt;be able to apply existing mathematical functions/ String functions in Python Programs.</p>	<p>Worksheets Bridge Course assignments- Functions, random, lists and dictionaries Quizzes</p> <p>Flipped classroom:CODES</p> <ul style="list-style-type: none"> <li>• Lists</li> <li>• Tuples</li> <li>• Dictionaries</li> <li>• Library and functions</li> <li>• Syntaxes of defining functions</li> <li>• Steps to create library/packages/modules</li> </ul>	<p>Class Test on Error finding Output finding tuples/dictionaries/ lists &amp; Files Quiz Class participation (written and oral)</p>

<p><b>April</b></p>	<p><b>File handling:</b>  <b>Text Files-(5 periods)</b>  open and close a file, read, write, and append to a file, standard input, output, and error streams, relative and absolute paths.</p> <p><b>Binary Files-(10 periods)</b>  Basic operations on a binary file: Open (filename – absolute or relative path, mode) / Close a binary file, Pickle Module – methods load and dump; Read, Write/Create, Search, Append and Update operations in a binary file.</p> <p>Basic operations on a binary file: Open (filename – absolute or relative path, mode) / Close a binary file, Pickle Module – methods load and dump; Read, Write/Create, Search, Append and Update operations in a</p> <p><b>CSV FILES</b>  <b>Introduction (3)</b>  Reader, writer, writerows()</p>	<p>Each child will be able to-  =&gt;be able to read/write text files  =&gt;be able to read files letter by letter/ word by word/ sentence by sentence</p> <p>Each child will be able to-  =&gt;Create Binary Files  =&gt;apply tell() and seek() for random file pointer movement  =&gt;Insert and display records  =&gt;Search Records  =&gt;Modify records  =&gt;Delete Records</p>	<p><b>QUIZ</b>  <b>Worksheets</b>  <b>Lab Assignments-</b></p> <ol style="list-style-type: none"> <li>1.WAP to read and count character from data.txt file :  Character Upper/ Lower Character  Digit Character Characters/Symbol/ Spaces Words/ Lines  Vowel /Consonant Character</li> <li>2.WAP to read and count Words start with from text file :  Upper /Lower / Digits / Special / Vowel / Consonant Character</li> <li>3.WAP to read and count Words end with from text file :  Upper /Lower / Digits / Special / Vowel / Consonant/User Define Character</li> <li>4.WAP to read and count Words start and end with from text file :  Upper /Lower / Digits / Special / Vowel / Consonant/User Define Character</li> <li>5.WAP to count the word present in a text file  DATA.TXT. Word: - like this/This, My, Me, He, She, to, the, do, Mr. and Mrs.</li> <li>6.Write a program to enter the following records in a binary file:  Item No integer  Item_Name string  Qty integer  Price float  Number of records to be entered should be accepted from the user. Read the file to display the records in the following format:  Item No:  Item Name :  Quantity:  Price per item:  Amount: ( to be calculated as Price * Qty)</li> </ol> <p>10. Make programs based on CSV files for a Newspaper Agency Quizzes</p> <p><b>Art Integration</b>-Collage of Algorithms for binary files  <b>Flipped Classroom-</b></p>	<p>•Quiz using Google forms</p> <p>•Class participation (written and oral)</p> <p>•Weekly assignment/ worksheet (submission of work) Functions, text files, Binary files</p>
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			PPT/PDF Videos Algorithms to be flipped-Text files Algorithms to be flipped- Binary files	
May	<p><b>May</b>  <b>CSV files –( 5 days)</b>  Insert, Delete, Search, Modify, Display</p> <p><b>Unit III: Database - Management:- (11 days)</b>  <b>REVISION</b>  <b>Database Concepts:</b>  Introduction to database concepts and its need.  Relational data model: Concept of domain, relation, tuple, attribute, degree, cardinality, key, primary key, candidate key, alternate key and foreign key;  Structured Query Language:  <b>General Concepts:</b> Advantages of using SQL, Data Definition Language and Data Manipulation Language;  <b>Data Types:</b> number / decimal, character / varchar / varchar2, date; SQL commands: SELECT, DISTINCT, FROM, WHERE, IN, BETWEEN, LIKE, NULL / IS NULL, ORDER BY, GROUP BY, HAVING;  <b>SQL functions:</b> SUM ( ), AVG (</p>	<p>Each child will be able to-  =&gt;Create CSV Files  =&gt;Insert and display records  =&gt;Search Records  =&gt;Modify records  =&gt;Delete Records</p> <p>Students will be able to-  Create SQL databases and tables Solve SQL queries</p> <p>Students will be able to write synopsis of their project work</p>	<p><b>Worksheets</b>  <b>Lab Assignments-</b>  Q1. Write a program to read entire data from file data.csv  Q2. Write a program to search the record from “data.csv” according to the admission number input from the user. Structure of record saved in “data.csv” is Adm_no, Name, Class, Section, Marks  Q3. Write a program to add/insert records in file “data.csv”. Structure of a record is roll number, name and class.  Q4. Write a program to copy the data from “data.csv” to “temp.csv”  Q5. Write a program to read all content of “student.csv” and display records of only those students who scored more than 80 marks. Records stored in students is in format : Rollno, Name, Marks  Q6. Write a program to display all the records from product.csv whose price is more than 300. Format of record stored in product.csv is product id, product name, price,.</p> <p><b>SQL WORKSHEETS</b>  <b>Quizzes</b>  <b>Art Integration-</b> ‘Poster/Flyer’  List of SQL commands</p> <p>• <b>Flipped Classroom-</b>  PPT/PDF  Videos  Algorithms to be flipped-CSV files</p> <p>• <b>Flipped Classroom-</b></p>	<p>•Quiz using Google forms</p> <p>•Class participation (written and oral)</p> <p>•Weekly assignment/ worksheet (submission of work)  Class Test on MYSQL table creation, Queries and Stating Output of queries based on CBSE papers.</p> <p><b>Weekly test</b>  <b>20.5.2022</b></p>

	<p>), COUNT ( ), MAX ( ) and MIN ( );</p> <p><b>Joins: equi-join and natural join</b></p> <p><b>PROJECT WORK – ( 2 DAYS)</b></p>		<p>Notes on Databases and queries &amp; Joins followed by practical assessment and MCQs</p> <ul style="list-style-type: none"> <li>• <b>Flipped classroom</b>-Sample Project XII Followed by compilation of synopsis of the CBSE Project in the class.</li> </ul>	
<p><b>July</b></p> <p>Teaching days:-20</p>	<p><b>MySQL-PYTHON Connectivity: (15 PERIODS)</b></p> <p><b>Interface of Python with an SQL database</b></p> <ul style="list-style-type: none"> <li>-Connecting SQL with Python</li> <li>-Creating Database connectivity Applications</li> <li>- Performing Insert, Update, Delete queries</li> <li>Display data by using fetchone(), fetchall(), rowcount</li> </ul> <p><b>Data-structures: (8 periods)</b></p> <p>lists, stacks</p> <p><b>Stacks</b></p> <p>Applications</p> <p>Functions-push, pop, peek, display</p>	<p><b>Students will be able to-</b></p> <p>=&gt;Write codes for stacks -</p> <p>Push, pop, peek, display</p> <p>Students will be able to :</p> <ul style="list-style-type: none"> <li>➤ Create interface of Python with an SQL database</li> <li>➤ Connect SQL with Python</li> <li>➤ Create Database connectivity Applications</li> <li>- Perform Insert, Update, Delete queries</li> <li>➤ Display data by using fetchone(), fetchall(), rowcount</li> <li>➤ Apply aggregate functions in queries</li> <li>➤ Integrate SQL with Python by importing the MySQL module</li> </ul>	<p>Worksheets</p> <p>Lab Assignments</p> <p>Quizzes</p>	<p>Students will be assessed through:</p> <p>Short Revision test through Google forms/ Class Test</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p> <p>Lab Work:-MYSQL, database connectivity</p> <p>Quiz</p> <p>Weekly test-(35+15 Marks)</p> <p>MYSQL, database Connectivity, CSV Files,</p>
<p><b>August</b></p> <p>Teaching days:-19</p>	<p><b>Unit II: Computer Networks (10 PERIODS)</b></p> <ul style="list-style-type: none"> <li>• <b>Evolution of Networking:</b> ARPANET, Internet, Interspace</li> </ul> <p>Different ways of sending data across the network with reference to switching techniques (Circuit and Packet switching).</p> <ul style="list-style-type: none"> <li>• <b>Data Communication terminologies:</b> Concept of Channel, Bandwidth (Hz, KHz, MHz) and Data transfer rate (bps, Kbps, Mbps, Gbps,</li> </ul>	<p>Students will come to know about various types of networks/ topologies prevalent in today's world.</p> <ul style="list-style-type: none"> <li>➤ will be able to distinguish among different communications medias.</li> <li>➤ will be able to state advantages and disadvantages of various data switching techniques used in networks.</li> <li>➤ will be able to state steps</li> </ul>	<p>Worksheets</p> <p>Lab Assignments</p> <p>Quizzes</p>	<p>Students will be assessed through:</p> <p>Short Revision test through Google forms/ Class Test</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p>

	<p>Tbps).</p> <ul style="list-style-type: none"> <li>● <b>Transmission media:</b> Twisted pair cable, coaxial cable, optical fiber, infrared, radio link, microwave link and satellite link.</li> <li>● <b>Network devices:</b> Modem, RJ45 connector, Ethernet Card, Router, Switch, Gateway, WiFi card.</li> <li>● <b>Network Topologies and types:</b> Bus, Star, Tree, PAN, LAN, WAN, MAN.</li> <li>● <b>Network Protocol:</b> TCP/IP, File Transfer Protocol (FTP), PPP, HTTP, SMTP, POP3, Remote Login (Telnet) and Internet, Wireless / Mobile Communication protocol such as GSM, GPRS and WLL.</li> </ul>	<p>of setting up a communication network for a company.</p> <p>➤ various types of networks/topologies prevalent in today's world</p>		
<p><b>Sept</b></p> <p>Teaching days:-22</p>	<p><b>Unit II: Computer Networks (6 PERIODS)</b></p> <ul style="list-style-type: none"> <li>● <b>Mobile Telecommunication Technologies:</b> 1G, 2G, 3G, 4G and 5G; Mobile processors; Electronic mail protocols such as SMTP, POP3, Protocols for Chat and Video Conferencing: VoIP, Wireless technologies such as Wi-Fi and WiMax</li> <li>● <b>Network Security Concepts:</b> Threats and prevention from Viruses, Worms, Trojan horse, Spams Use of Cookies, Protection using Firewall, https; India IT Act, Cyber Law, Cyber Crimes, IPR issues, hacking.</li> <li>● <b>Introduction To Web services:</b> WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML); Hyper Text Transfer Protocol (HTTP); Domain Names; URL; Website, Web browser, Web Servers; Web Hosting</li> </ul> <p><b>REVISION FOR MID TERM EXAM (7 PERIODS)</b></p>	<p>Students will come to know about.</p> <p>➤ various security measures used on computer network.</p> <p>➤ will come to know about different Network Models</p> <p>➤ will be able to differentiate among different Network Models.</p> <p>➤ Differentiate among different telecom technologies</p> <p>➤ Differentiate among different generations of mobile telecom</p> <p>➤ Define various terms related to Web services</p> <p>➤ Differentiate between XML and HTML</p>	<p>Worksheets</p> <p>Lab Assignments</p> <p>Quizzes</p>	<p>Students will be assessed through:</p> <p>Short Revision test through Google forms/ Class Test</p> <p>Class participation</p> <p>Submission of work</p> <p>Practice Worksheets</p> <p>Assignment Questions</p> <p><b>Mid Term Examination</b></p> <p><b>Theory:70</b></p> <p><b>Practical:30</b></p>

October-Jan	CBSE PROJECT WORK Lab Work REVISION
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### Psychology

Month	Topics covered	Learning outcomes	Activities	Assessments
April	<p>Chapter: Variations in Psychological Attributes</p> <ul style="list-style-type: none"> <li>Individual Differences in</li> <li>Human Functioning</li> <li>Assessment of Psychological Attributes</li> <li>Intelligence</li> <li>Theories of Intelligence</li> <li>Theory of Multiple Intelligences</li> <li>Triarchic Theory of Intelligence</li> <li>Planning, Attention-arousal, and Simultaneous-successive Model of Intelligence</li> <li>Individual Differences in Intelligence</li> <li>Culture and Intelligence</li> <li>Emotional Intelligence</li> <li>Special Abilities</li> <li>Aptitude : Nature and Measurement</li> <li>Creativity</li> </ul> <p>Chapter: Self and Personality</p> <ul style="list-style-type: none"> <li>Concept of self</li> <li>Cognitive and behavioural aspects of self</li> <li>Self-esteem</li> <li>Self-efficacy</li> </ul>	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>Explain psychological attributes on which people differ from each other.</li> <li>State different methods that are used to assess psychological attributes.</li> <li>Explain what constitutes intelligent behaviour.</li> <li>Identify mentally challenged and gifted individuals</li> <li>Differentiate between intelligence and aptitude.</li> <li>Describe the link between culture and intelligence.</li> </ul>	<ul style="list-style-type: none"> <li>Computing IQ of individuals.</li> <li>Finding out one's own aptitude and interest in a certain area.</li> <li>Identifying verbal, nonverbal and performance tests from a few given tests.</li> <li>Finding out famous people and their area of intelligence as per Howard Gardener's Theory of Multiple Intelligences.</li> </ul>	<ul style="list-style-type: none"> <li>Assignments</li> <li>Practice sheets</li> <li>Google MCQ</li> <li>Quiz</li> </ul>

	<ul style="list-style-type: none"> <li>• Self-regulation</li> <li>• Culture and Self</li> <li>• Concept of Personality</li> </ul>			
May	<p>Chapter: Self and Personality</p> <ul style="list-style-type: none"> <li>• Major approaches to the study of personality</li> <li>• Type Approaches</li> <li>• Trait Approaches</li> <li>• Psychodynamic Approach</li> <li>• Behavioural Approach</li> <li>• Cultural Approach</li> <li>• Humanistic Approach</li> </ul>	<p>Each child will be able to:</p> <ul style="list-style-type: none"> <li>• Explain the different trait and type theories</li> <li>• Differentiate between trait approach and type approach</li> <li>• Describe the psychodynamic approach to personality.</li> <li>• Explain the behavioural approach</li> <li>• Explain the cultural approach</li> <li>• Explain the humanistic approach</li> <li>• Describe the different methods to assess personality</li> <li>• State features of projective techniques</li> <li>• Explain techniques of behavioural analysis</li> <li>• Explain self report</li> </ul>	<ul style="list-style-type: none"> <li>• Activity on “who am I? – understanding self”.</li> <li>• Finding out the personality traits of your friend as per Allport’s theory</li> <li>• Identifying the defence mechanisms used in one’s daily life</li> <li>• Sketching/Painting to reflect upon one’s personality</li> </ul>	<ul style="list-style-type: none"> <li>• Assignments</li> <li>• Practice sheets</li> <li>• Google MCQ</li> <li>• Quiz</li> </ul>
July	<p>Chapter: Self and Personality</p> <ul style="list-style-type: none"> <li>• Assessment of Personality</li> </ul>	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>• Explain self reports</li> <li>• Describe the different</li> </ul>	<ul style="list-style-type: none"> <li>• Administering a self report to assess the personality of their</li> </ul>	<ul style="list-style-type: none"> <li>• Assignments</li> <li>• Practice sheets</li> <li>• Google MCQ</li> </ul>



	<p>Chapter: Psychological disorders</p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Classification of disorders</li> <li>• Factors underlying abnormal behaviour</li> <li>• Anxiety disorders</li> <li>• Obsessive compulsive related disorders</li> <li>• Trauma and stressor related disorders</li> <li>• Somatic symptom and related disorders</li> <li>• Dissociative disorders</li> <li>• Depressive disorders</li> <li>• Bipolar and related disorders</li> <li>• Schizophrenia</li> </ul>	<p>projective techniques</p> <ul style="list-style-type: none"> <li>• Explain the types of behavioural analysis</li> <li>• Explain the concept of abnormality</li> <li>• Describe anxiety disorders</li> <li>• Explain OCD</li> <li>• Describe symptoms of PTSD</li> <li>• State the types of somatic symptom and related disorders</li> <li>• Describe dissociative disorders</li> <li>• Explain major depressive disorder</li> <li>• Explain bipolar disorder</li> <li>• Differentiate between positive and negative symptoms of schizophrenia</li> </ul>	<p>friend</p> <ul style="list-style-type: none"> <li>• List characters from films and books who have suffered from any psychological disorder</li> <li>• Identify different types of delusions from a few given situations</li> </ul>	<ul style="list-style-type: none"> <li>• Quiz</li> </ul>
August	<p>Chapter: Psychological disorders</p> <ul style="list-style-type: none"> <li>• Schizophrenia</li> <li>• Neurodevelopmental disorders</li> <li>• Disruptive, Impulse control and conduct disorders</li> <li>• Feeding and Eating disorders</li> <li>• Substance related and addictive disorders</li> </ul>	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>• Explain symptoms of schizophrenia</li> <li>• Describe ADHD</li> <li>• Describe</li> <li>• Autism spectrum disorder</li> <li>• Explain substance related and addictive</li> </ul>	<ul style="list-style-type: none"> <li>• Watch 'A beautiful mind' to understand Schizophrenia</li> <li>• Find out a case study for feeding and eating disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Assignments</li> <li>• Practice sheets</li> <li>• Google MCQ</li> <li>• Quiz</li> </ul>

	<p>Chapter: Therapeutic Approaches</p> <ul style="list-style-type: none"> <li>• Nature and Process of psychotherapy</li> <li>• Therapeutic relationship</li> <li>• Behaviour Therapy</li> <li>• Cognitive Therapy</li> <li>• Humanistic-existential Therapy</li> </ul>	<p>disorders</p> <p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>• Explain nature of psychotherapy</li> <li>• Explain therapeutic alliance</li> <li>• Describe the different behavioral techniques</li> <li>• Explain Rational Emotive Therapy and Beck's therapy</li> <li>• Describe different types of humanistic existential therapy</li> </ul>	<ul style="list-style-type: none"> <li>• Watch 'Dear Zindagi'</li> <li>• Role Play of a client and therapist</li> <li>• List the different ways of reinforcing positive behaviour</li> </ul>	
September	<p>Chapter: Therapeutic Approaches</p> <ul style="list-style-type: none"> <li>• Biomedical Therapy</li> <li>• Alternative Therapies</li> <li>• Rehabilitation of the Mentally Ill</li> </ul> <p>Chapter 6: Attitude and Social Cognition</p> <ul style="list-style-type: none"> <li>• Explaining social behavior</li> <li>• Nature and components of attitude</li> <li>• Attitude formation - factors</li> </ul>	<p>Each student will be able to:</p> <ul style="list-style-type: none"> <li>• Explain biomedical and alternative therapies.</li> <li>• Explain how people with mental disorders can be rehabilitated</li> <li>• Explain components of attitude</li> <li>• Describe processes and factors of attitude formation</li> </ul>	<ul style="list-style-type: none"> <li>• Connecting the different therapeutic approaches to psychological disorders</li> <li>• Discussion on ethical considerations of psychotherapy.</li> <li>• Watch some powerful advertisements And find out what factor led to attitude change in consumers</li> </ul>	<ul style="list-style-type: none"> <li>• Assignments</li> <li>• Practice sheets</li> <li>• Google MCQ</li> <li>• Quiz</li> </ul>

	REVISION OF TERM 1 EXAMINATION SYLLABUS			
October:	Chapter 6: Attitude and Social Cognition <ul style="list-style-type: none"> <li>• Attitude formation - theories</li> <li>• Attitude change</li> <li>• Prejudice and discrimination</li> <li>• Strategies for handling prejudice</li> </ul>	Each student will be able to: <ul style="list-style-type: none"> <li>• Describe processes of attitude change</li> <li>• Explain factors of attitude change</li> <li>• State strategies for reducing prejudice</li> </ul>	<ul style="list-style-type: none"> <li>• Analyzing an advertisement (video) for any product based on the factors affecting attitude change.</li> <li>• Showing application of balance theory in different situations</li> </ul>	<ul style="list-style-type: none"> <li>• Assignments</li> <li>• Practice sheets</li> <li>• Google MCQ</li> <li>• Quiz</li> </ul>
November	Chapter 7: Chapter: Social Influence and Group Processes <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Nature and Formation of Groups</li> <li>• Types of groups</li> <li>• Social Loafing</li> <li>• Social Facilitation</li> </ul>	Each student will be able to: <ul style="list-style-type: none"> <li>• Explain nature of groups</li> <li>• Describe formation of groups</li> <li>• Describe how groups are formed</li> <li>• State the influence of group on individual behaviour</li> <li>• Explain why people join groups</li> </ul>	<ul style="list-style-type: none"> <li>• Read the graphic novel on group processes</li> <li>• Students will identify the stages of group formation in any movie showing teamwork.</li> <li>• Students will identify and write the different</li> <li>• primary/secondary groups they are a part of.</li> </ul>	<ul style="list-style-type: none"> <li>• Assignments</li> <li>• Practice sheets</li> <li>• Google MCQ</li> <li>• Quiz</li> </ul>
December	Revision of syllabus	Each child will be able to: <ul style="list-style-type: none"> <li>• Describe the various mental disorder</li> <li>• Explain the</li> </ul>	-----	<ul style="list-style-type: none"> <li>• Practice tests</li> <li>• MCQ</li> <li>Board Papers</li> </ul>

		various types of psychotherapy <ul style="list-style-type: none"> <li>• Explain components of attitude</li> <li>• Describe formation of attitudes</li> </ul>		
January	Revision of syllabus	Each child will be able to: <ul style="list-style-type: none"> <li>• Describe the various mental disorder</li> <li>• Explain the various types of psychotherapy</li> <li>• Explain components of attitude</li> <li>• Describe formation of attitudes</li> <li>• Explain the different types of social influences and group processes</li> </ul>	-----	<ul style="list-style-type: none"> <li>• Practice tests</li> <li>• MCQ</li> <li>• Board Papers</li> </ul>

## ECONOMICS

Month	Topics covered	Learning	Activites	Assessments
March	Government Budget (8 days)	Each student will be able to: Identify the spending categories and major revenue sources in the Union budget State the various objectives of the Budget. Define fiscal policy, identifying the roles of tax rates and government spending Differentiate between the three types of budget. Identify the types of deficit Explain the various sources from which the budgetary deficits are financed	Differentiate between capital receipts and capital expenditure? Budget lesson starter worksheets for a lesson introducing budgeting will be given. It includes creating a personal budget for yourself, and earning money while prioritizing needs and wants.	Worksheet
April	Indian Economy 1950-1990 (7 days)	Each student will be able to: The importance of planning in life-Individual as well as an economy To comprehend the meaning of planning by think pair and share method. Identify the goals of five year plan Analyze the importance of planning in development and the achievements as well as the failures of planning	Explain the goals of planning. The progress of the Indian economy during the first five year plan was impressive. Justify. Critically evaluate the licensing system and import substitution closed under the industrial and trade policies	Worksheet
	New Economic policy 1991 (7 days)	Each student will be able to: Identify and discuss the causes for the adoption of the New Economic policy.  1. Critically understand the background of the reform policies. 2. Critically point out the mechanism through which reform policies were introduced. 3. Discuss the causes for the adoption of the New Economic policy. 4. Comprehend the process of globalization and its implications for India. 5. Be aware of the impact of the reform process in various sectors. 6. Identify and discuss the causes for the adoption of the New Economic policy.	Observe around you—you will find State Electricity Boards (SEBs), BSES and many public and private organizations supplying electricity in a city and states. Compare the differences. There are private buses on roads alongside the government bus services? Why has the private transport increased? Conduct a survey (Analysing) Names of banks- private, private foreign, nationalized banks. Loss making companies to be nationalized-discussion.	Worksheet
	Money and Banking (Contd. In May – 5 days)	Each student will be able to: Each student will be able to: Comprehend the meaning of money and its functions. Supply of money and its measures. Develop the understanding of money creation by commercial banks and functions of central banks. Explain the process of credit creation by commercial banks.	Identify different banks from logos. Able to identify a fake currency from genuine one. Cheque activity – Issue a cheque according to given information. Understand how important is RBI for the country and how it controls the supply of money in the economy.	Worksheet.  Class test.
May	National Income	Each student will be able to: Define consumer good and capital good.	An ambassador in US embassy in India stays in his job for a period exceeding one year. Would	Worksheet

	Accounting  (Contd. In July – 15 days)	<p>Define final good and intermediate good. Categorise different goods into consumer, capital, final or intermediate good. Draw the circular flow of income. Analyze the circular flow of income. Discover the flow of income in various sectors Categorise items for different methods for the measurement of national income Define income method Know expenditure method Classify factor income</p>	<p>he be treated as a resident or a non-resident of India? Why is income earned by foreigners working in a branch of a foreign bank in India a part of the domestic factor income? In what sense can defence and security provided by the government be treated as intermediate service?</p>	Class test
July	Human Capital Formation (6 days)	<p>Each student will be able to: Role of human capital formation Problems Factors affecting human capital Each student will be able to identify the importance of human capital formation. Identify the ways its done. Comprehend the difference between human development and capital formation. Critically appraise the current education scenario. The concepts of Human Resource, Human Capital Formation and Human Development The links between investment in human capital, economic growth and human development The need for government spending on education and health</p> <p>The state of India's educational attainment.</p>	<p>What are the two major sources of human capital formation in a country? <u>What are the indicators of educational achievement in a country?</u> <u>Why do we observe regional differences in educational attainment in India?</u> In your view, is it essential for the government to regulate the fee structure in education and health care institutions? If so ,why? EACH ONE TEACH ONE-Discussion on the initiative taken in the country. Discuss Skill Development programmes initiated by the government. 'Education commission 1964-66 had recommended that at least 6 percent of GDP must be spent on education. How far has India been able to achieve the goal? What is human capital? Explain the role of human capital in economic development.</p>	Worksheet
August	Theory of income and employment (15 days)	<p>Each student will be able to: Explain the components of Aggregate Demand Explain Consumption Function Explain Savings Functions Determination of Equilibrium by AD AS approach and S I approach. Explain Multiplier Explain Excess Demand Explain Deficient demand Explain Monetary Policy Explain fiscal policy</p>	<p>There is minimum consumption even when income level is zero? Why? Higher savings induces greater investment. Comment. Why do we consider imports a leakage or negative component of AD?</p> <p>Can consumption exceed income? If yes, what is savings? Distinguish between average propensity to consume and marginal propensity to consume.</p>	Worksheet

			<p>The value of which of these two can be greater than one and when?</p> <p>In an economy planned spending is greater than planned output. Explain all the changes that will take place in the economy. How can the following be treated to correct excess demand-(i) Bank Rate (ii) Cash Reserve Ratio Develop the idea of propensity to consume by class activities i.e. role play giving them money of different amount and ask them to spend it according to their need or interest and after the activity tell them the key concepts.</p>	
	Rural Development (5 days)	<p>Each student will be able to: Analyze current economy scenario in India. Make students understand the initiatives of government in addressing it's Challenge. Familiarize student concept of current Challenges facing Indian economy, especially rural development Understand rural development and the major issues associated with it Appreciate how crucial the development of rural areas is for India's overall development Understand the critical role of credit and marketing systems in rural development Learn about the importance of diversification of productive activities to sustain livelihoods Understand the significance of organic farming in sustainable development.</p>	<p>Explain three non-farm areas of employment for rural population. Why is it important to develop proper storage facilities in rural areas? Why is agricultural diversification essential for sustainable livelihoods? Explain the importance of self help groups (SHGS) in rural areas.</p> <p>Quiz</p> <p>Role play</p>	Worksheet
September	Balance of Payments and Foreign Exchange (6 days)	<p>Each student will be able to</p> <p>Define foreign exchange Understand Balance of Payments Determine the rate of exchange Give reasons for the fluctuations in foreign exchange. Explain why a deficit in the current account of the balance of payments may result in downward pressure on the exchange rate of the currency. Explain why a surplus in the current account of the balance of payments may result in upward pressure on the exchange rate of the currency.</p>	<p>Is purchasing power of currency is stable or unstable. Role of Depreciation; Devaluation; Appreciation and Revaluation in Exports and Imports For balancing Balance of Payment Account.</p>	Worksheet
October	Employment (5 days)	<p>Each student will be able to :</p> <p>Understand a few basic concepts relating to employment such as economic</p>	<p>Provision of employment opportunities is the only stable solution to the problem of poverty.</p>	Worksheet

		<p>activity, worker, workforce and unemployment.</p> <p>Understand the nature of participation of men and women in various economic activities.</p> <p>Know the nature and extent of unemployment.</p> <p>Students will understand the various types of unemployment: frictional, structural, and cyclical.</p> <p>Assess the initiatives taken by the government.</p>	<p>Do you agree to this statement? Comment</p> <p>Skill Development programmes initiated by the government</p> <p>How will you know whether a worker is working in the informal sector?</p> <p>Is it necessary to generate employment in the formal sector rather than in the informal sector? Why?</p> <p>Why are regular salaried employees more in urban areas than in rural areas?</p> <p>Why are less women found in regular salaried.</p> <p>Discuss Current news- labour migration.</p>	
	Environment (5 days)	<p>Each student will be able to:</p> <p>Discuss Current Scenario of pollution and its effect on Indian farmers.</p> <p>Discuss Pollution in India</p> <p>Find solutions to the problems.</p> <p>Importance and Functions of environment</p> <p>Functions</p> <p>Problems, Causes and State of degradation of environment.</p> <p>Sustainable development</p>	<p><b>Song or Lyrics.</b></p> <p>Allow students to showcase talent and simultaneously learn. Content is through preparing songs and lyrics.</p> <p>India has abundant natural resources- substantiate the statement Distinguish between economic development and sustainable development.</p> <p>Poster designing.</p>	Worksheet
	Comparative study (6 days)	<p>Each student will be able to :</p> <p>Analyse India's relation with neighbouring countries, its development vis a vis development experience of neighbours.</p>	<p>Some value-based questions and PISA based questions related to lesson.</p> <p><b><u>DEBATE AND DISCUSSION</u></b></p> <p>News paper articles. Relate present relations between the 3 countries</p>	Worksheet
November	Revision			
December	Pre board Exam			
January 2023	Revision and Pre board			
February	Revision			



## PHYSICAL EDUCATION

Month	Topics Covered	Learning Outcomes	Activities	Assessment
APRIL MAY 2022	<b><u>Unit I - Management of Sporting Events</u></b> Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling) Various Committees & their Responsibilities (pre; during & post) Fixtures and its Procedures – Knock-Out (Bye & Seeding) & League (Staircase & Cyclic)	Each student will be able to:  Explain types of tournaments and draw Fixtures – Knock-Out (Bye & Seeding) & League (Staircase & Cyclic) Know the different types of committees for organizing tournaments (pre; during & post)	Drawing of fixtures i.e., Knock-Out & League (Staircase & Cyclic)  Discussion on organizing P.E. Volleyball tournament  Students to discuss the textual based questions	Questions will be discussed in class  MCQ'S  Questions for home assignment
JULY 2022	<b><u>Unit II - Children &amp; Women in Sports</u></b> Common Postural Deformities - Knock Knee; Bow Legs; Flat Foot; Round Shoulders; Lordosis, Kyphosis, and Scoliosis and their corrective measures Special consideration (Menarche & Menstrual Dysfunction) Female Athletes Triad (Osteoporosis, Amenorrhea, Eating Disorders)	Each student will be able to:  Describe different postural deformities and their cause and remedy Know the signs and symptoms of female athletes' triad	Discussion on types of Deformities  Students to discuss the textual based questions	Questions will be discussed in class  MCQ'S  Questions for home assignment
	<b><u>Unit III - Yoga as Preventive Measure for Lifestyle Disease</u></b> Obesity: Procedure, Benefits & Contraindications for <i>Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama</i>  Diabetes: Procedure, Benefits & Contraindications for <i>Katichakrasana, Pavanmuktasana, Bhujangasana, Shalabhasana, Dhanurasana, Supta-vajarasana, Paschimottanasana, Ardha-Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati</i>  Asthma: Procedure, Benefits & Contraindications for <i>Tadasana, Urdhwahastottansana, UttanMandukasana, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalabhati, Gomukhasana</i>	Each student will be able to:  Know Lifestyle Diseases Describe the procedure, benefits & contraindications of the asanas	Students are to perform the various types of asanas  Discuss the textual based questions	Questions will be discussed in class  MCQ'S  Questions for home assignment

	<p><i>Matsyaasana, Anuloma-Viloma</i></p> <p>Hypertension: Procedure, Benefits &amp; Contraindications for <i>Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana, UttanMandukasana, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadishodhanapranayam, Sitlipranayam</i></p>			
AUGUST 2022	<p><b><u>Unit IV - Physical Education &amp; Sports for CWSN (Children with Special Needs - Divyang)</u></b></p> <p>Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics)</p> <p>Advantages of Physical Activities for children with special needs</p> <p>Strategies to make Physical Activities assessable for children with special needs</p>	<p>Each student will be able to:</p> <p>Differentiate between Special Olympics; Paralympics, and Deaflympics</p> <p>Describe the activities &amp; strategies for children with special needs</p>	<p>Discussion on Children with special needs</p> <p>Discuss the textual based questions</p>	<p>Questions will be discussed in class</p> <p>MCQ'S</p> <p>Questions for home assignment</p>
AUGUST 2022	<p><b><u>Unit V - Sports &amp; Nutrition</u></b></p> <p>Balanced Diet &amp; Nutrition: Macro &amp; Micro Nutrients</p> <p>Nutritive &amp; Non-Nutritive Components of Diet</p> <p>Eating for Weight Control – A Healthy Weight, The Pitfalls of Dieting, Food Intolerance &amp; Food Myths</p>	<p>Each student will be able to:</p> <p>Describe the concept of balanced diet and nutrition. Differentiate between Macro and Micro Nutrients. Explain Nutritive &amp; Non-Nutritive Components of Diet &amp; Food Myths</p>	<p>Discussion on Healthy Weight, Pitfalls of Dieting, &amp; Food Intolerance</p> <p>Students to discuss the textual based questions</p>	<p>Questions will be discussed in class</p> <p>MCQ'S</p> <p>Questions for home assignment</p>
AUGUST 2022	<p><b><u>Unit VI Test &amp; Measurement in Sports</u></b></p> <p>Fitness Test – SAI Khelo India Fitness Test in school:</p> <ul style="list-style-type: none"> <li>Age group 5-8 yrs/ class 1-3: BMI, Flamingo Balance Test, Plate Tapping Test</li> <li>Age group 9-18yrs/ class 4-12: BMI, 50mt Speed test, 600mt Run/Walk, Sit &amp; Reach flexibility test, Strength Test (Abdominal Partial Curl Up, Push-Ups for boys, Modified Push-Ups for girls)</li> </ul> <p>Computing Basal Metabolic Rate (BMR)</p> <p>Rikli &amp; Jones - Senior Citizen Fitness Test</p> <ol style="list-style-type: none"> <li>Chair Stand Test for lower body strength</li> <li>Arm Curl Test for upper body strength</li> <li>Chair Sit &amp; Reach Test for lower body</li> </ol>	<p>Each student will be able to:</p> <p>Understand the importance of flexibility, explosive strength and balance</p> <p>Understand the ideal BMI</p> <p>Know the six Rikli &amp; Jones – Senior Citizen Fitness Test</p>	<p>Collect data from at least 2 family members for upper body strength and flexibility</p> <p>Students to discuss the textual based questions</p>	<p>Questions will be discussed in class</p> <p>MCQ'S</p> <p>Questions for home assignment</p>

	flexibility IV. Back Scratch Test for upper body flexibility V. Eight Foot Up & Go Test for agility VI. Six Minute Walk Test for Aerobic Endurance			
SEPTEMBER 2022	<b><u>Unit VII Physiology &amp; Injuries in Sports</u></b> Physiological factors determining components of physical fitness Effect of exercise on Muscular System Effect of exercise on Cardio-Respiratory System Sports injuries: Classification (Soft Tissue Injuries - Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)	Each student will be able to:  Explain the Physiological Determinants of Strength, Speed, Endurance & Flexibility Students will know the Immediate and Long-term effects of Cardio Respiratory system	Discussion on various sports injuries (Soft Tissue Injuries, Bone & Joint Injuries) and on Effect of exercise on Muscular System  Students to discuss the textual based questions	Questions will be discussed in class  MCQ'S  Questions for home assignment
SEPTEMBER 2022	<b><u>Unit VIII Biomechanics &amp; Sports</u></b> Newton's Law of Motion & its application in sports Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports Friction & Sports Projectile in Sports	Each student will be able to:  Explain Newton's three Laws of Motion, Equilibrium, & Projectile with their application in sports Understand Friction & Sports	Discussion on Newton's Law of Motion, gravity and throwing angles  Students to discuss the textual based questions	Questions will be discussed in class  MCQ'S  Questions for home assignment
OCTOBER 2022	<b><u>Unit IX Psychology &amp; Sports</u></b> Personality; its definition & types (Jung Classification & Big Five Theory) Meaning, Concept & Types of Aggressions in Sports Psychological Attributes in Sports – Self Esteem, Mental Imagery, Self-Talk, Goal Setting	Each student will be able to:  Explain Personality; its definition & types Know the Meaning, Concept & Types of aggression in sports Understand psychological attributes in sports	Discussion on Personality, Aggression and Psychological Attributes in Sports  Students to discuss the textual based questions	Questions will be discussed in class  MCQ'S  Questions for home assignment
OCTOBER 2022	<b><u>Unit X Training in Sports</u></b> Concept of Talent Identification and Talent Development in Sports Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle Types & Method to Develop – Strength, Endurance and Speed Types & Method to Develop – Flexibility and	Each student will be able to:  Understand the concept of talent identification & development in sports Know Sports Training Cycle Explain the definition, types & methods of improving – Strength,	Discussion on concept of Talent Identification and Talent Development in Sports, Micro, Meso, Macro Cycle and Strength, Endurance, Speed and Flexibility  Students to discuss the textual	Questions will be discussed in class  MCQ'S  Questions for home assignment

	Coordinative Ability	Endurance, Speed and Flexibility Know about Coordinative abilities	based questions	
	<u>REVISION FOR PREBOARD EXAMINATION</u>			