**CURRICULUM OF ENGLISH**

**CLASS XII**

**2021-2022**

**General Objective**: To lead the learners to substantiate an understanding of the connection between writing and thinking and

demonstrate effectiveness in using verbal and non verbal language appropriate to the goal.

- Improve communication between student – student and teacher-student.

- To develop academic skills.

- To enhance the students’ knowledge of subject content.

- To read literature with an appreciation for inter-relatedness of plot, character, theme and style.

- Form an appreciation for all genres of literature.

- To encourage goal- oriented teamwork.

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| PROJECTED CONTENT | METHODOLOGY | LEARNING OUTCOMES |
|  | **APRIL****(21 days)** |  |
| The Last Lesson (Flamingo) | The session would begin with an interaction on homework – and the way you treat it. (Student-Teacher Interaction) The learners would interpret the title of the lesson. The background knowledge of the author and his works would be given. The facilitator would develop the chain of events, with TEXT sequence or discourse/spoken with reference to the educational and personal domains. Difficult words and terms would be discussed. The prose will be explained. All possible questions and answers would be discussed and assigned. | They would develop their optimistic attitude towards life amidst many struggles.They would be able to familiarize themselves with specific backgroundinformation of Alphonse Daudet/ history of France.They would be able to make connections between similar situations in different storylines/life experiences like Indians under British imperialism. |
| TIGER KING(Vistas) | The session would start with a short video on save tiger. The learners would interpret the title of the story and relate it to the video shown.The background of the author would be given. The story would be read aloud. The theme and underlying meaning would be discussed.A comparative study between Mrs Packletide’s Tiger and the lesson.Difficult words would be listed and explained. The moral of the story would be discussed. | The Learners will be able to uncover motives, absorb didactics.They would be able to familiarize with specific Royal Indian background information of the author/history of cruel insensitive kings who found pleasure in hunting and killing innocent animals.They would understand the importance of becoming sincere and trustworthy in thought and action.They would be understanding, responsible, tolerant and have respect forclass identities – democratic citizenship. |
| My Mother at sixty-six (Flamingo) | Pre-reading activity would be the first step wherein the students would delve deep into the title of the poem and make an interpretation of the title as it indicates the subject and theme. (student- teacher interaction)They would compare the poem with the poem A Photograph.The background of the poet would be discussed. The poem would be read aloud with proper intonation rhyme and rhythm. Difficult terms and words would be explained so that the students can predict the atmosphere of the world inside the poem.The poem would be explained covering the phrases, sentences and discourse as well as their structuring.Silent reading of the poem by the students within five minutes and listing the difficult terms. The figures of speech and rhyme scheme would be discussed. | The students would be able to grasp the theme and meaning of the poem.They would be able to read the poem with proper tone and rhyme and develop an interest in poetry.Their vocabulary would be strengthened.Their analysing skills would be enhanced. |
| WRITING SKILLSNotice Writing | Warm up session:Learners would share their knowledge on the importance of a notice(Student- Teacher interaction)The Learners would be asked to speak about a notice they received and they remember still.The teacher would explain what a notice is and its purpose. The standard format of notice writing would be shown in the class. The teacher would discuss in detail what a notice should contain. The wide range of themes and objectives covered by notice would be discussed with examplesSpecial note on-5 WsWhatWhereWhenWhoWhom | Students will be able to analyse any NOTICE shown to them on the basis of the knowledge imparted.They will be able to frame notice about any event.They will be able to identify important information in any given notice.Students will be able to use appropriate style and format to write a NOTICE effectively. |
| INVITATION WRITING/REPLIES | Developing the format in sequence or discourse/spoken with reference to the educational, personal domains.The teacher would discuss with examples all kinds of invitations and the method of framing replies. | The learners would be able to express their ideas cohesively, completely, fluently and spontaneously with expressions, grammar usage and relevant vocabulary for a hospitable announcement of an event. |
| NOTE MAKING | In the beginning of the session, a text would be provided to the students to read and involve in note making to test previous knowledge.The facilitator would train the students to read a text minutely, or listen carefully to select, analyse and summarize the main points.Ways of making notes would be discussed:Annotation, outline notes, column notes, mind maps and summary notes. | The learners would be able to differentiate between annotation, outline notes, column notes, mind maps and summary notes from a text.They would be able to use the note taking suggestions to develop good notes based on classroom discussions. |
|  | **MAY**(21 days) |  |
| DEEP WATER | The session would begin with an interactive session wherein the teacher would ask the students to discuss about their phobias as related to the theme of the lesson. The prose would be read aloud. Difficult words would be discussed. The story outline, theme and values would be discussed by the teacher through a Power Pont Presentation The students would be grouped into six for the varied activities, discussions and presentations.The students would be grouped into six for the varied activities, discussions and presentations. | The learners would unfold their logical thinking skills. Their vocabulary will be enriched. They would be able to organize their thoughts, research work, compile and present in an economic writing style. The creative writing skills would be enhanced. They would develop their listening,speaking, questioning and presentation skills.They would strengthen their decision making skills. |
| LOST SPRING(Flamingo) | The session would begin with an audio –video presentation on the plight of poor children. The learners would be asked to interpret the title of the lesson relating it to the presentation.The background of the author would be given. The theme and story line would be explained.The teacher would developthe format in sequence or discourse spoken with reference to the ethical/globaland personal domains. | Learners will be able to sensitize the learners to the problem of child labour.They would be able to identify the problem, consider the options, weigh the pros and cons of each option, and reach a decision/opinion/solution.They would enhance their analytical skills.They would be able to uncover the motives of the poor parents/policemen/Industrialists/middlemen.They would be able to absorb didactics and inspiration.They would strengthen their integrated skills. |
| KEEPING QUIET(Flamingo) | The session would begin with the study of silence. The teacher would ask the learners to maintain silence and the study the sounds of silence for one minute.The learners would discuss on the sounds and thoughts of silence and relate to the title of the poem.The background of the author would be given. The poem would be read aloud and discussed. Difficult words would be listed out and discussed.The synopsis would be shown with the help of a PPT. | The learners would be able to understand the need of the hour to maintain peace and cut out the clamour and bloodshed, correlating it with contemporary background and personal experiences.They would be able to up threat and gentle heeding with the predictable loss of the world. (global domain) |
| WRITING SKILLSArticle Writing | The session would start with a pre-writing activity to create an interest towards writing. The teacher would define what an article is and discuss the purpose of article writing. The different styles, subjects, purpose of article writing would be discussed. The teacher would explain the technique of accumulating ideas, focussing on ideas and facts, planning, organizing, evaluating, structuring and editing. They would be taught the importance and way of producing a finished piece of work with examples. The requirements of the content, beginning, body and end would be focussed. | The students would develop an interest towards writing. Their planning and organizing techniques would be enhanced. They would be able to research on any subject andderive information from facts and present him in the form of a written piece. Their creative writing would be analysed. The interpreting and evaluative skills would be strengthened. |
| REPORT WRITING | The teacher in the beginning of the session would give students the opportunity to collect information on a declared issue before writing the report. During the session students will go through the process of developing ideas and collecting and organising information. They will then use the information to create the first draft of an imaginary report. They will then focus on some key areas of good writing and try to redraft their reports with these in mind.(Inductive Learning) | The learners will be able to discuss the purpose of various reports.They will be able to describe the kinds of information to include in specific reports andidentify tips for writing a clear, concise, and useful report.They will recognize and address patterns and trends and be able to explain how thetone of a report can affect worker morale and motivation. |
|  | **JULY** **(25 days)**  |  |
| ELEMENTARY SCHOOL CLASSROOM IN A SLUM(Flamingo) | Pre- reading Activity:The session would start with an interaction on Government’s eye on the schools of the slum areas.The title of the prose would be open for class interpretation.The facilitator would develop the format of text in sequence or discourse (spoken with reference to the ethical/global, public and personal domains of social and personal life. | The learners would familiarize themselves with specific background information of social inequalities.They would recognize the purpose of theme and the hidden pathos and nuances of the lines, correlating them with indigenous/ personal experiences.They would be able to build up empathy and sympathy with the prevalent inequalities of the society which rest on financial status and lost opportunities for children. |
| THE RATTRAP(Flamingo) | The session would begin with an interactive stage whereinthe students would discuss onthe temptations in life on basis of the theme of the story.The title of the lesson would be opened to the class for interpretation.The background knowledge of the author would be given. The prose would be explained. Difficult words would be listed and explained. The moral of the story would be discussed. | The students would be able to effectively provide a synopsis of the story. They will be able to analyze the values and thought process of the story. They would be able to identify the insecurity while tackling personal fears and horrors that lurk in the recesses of our mind.They would be able to appreciate the significance of developing personal fears yet rising above them to savour real liberty.Their vocabulary would be enriched. |
| WRITING SKILLS | The format, rules, technique would be discussed with examples. | The learners would be able to organise their thoughts and express freely. |
| Letter to the Editor | The usage of language would be taught and students would be assigned written tasks. | They would develop an interest towards writing thus enhancing their writing skills. Their thinking skills would be enhanced. |
| POSTER MAKING | The teacher will acquire and display several different posters from various sources. Some examples may include:Movie posters, Community events, AdvertisementsCampaign signs, Billboard picturesFull-page newspaper adsLearners will brainstorm the purpose of posters.(Student- Teacher Interaction)Some responses may include:To get people’s attentionTo get people to do somethingTo give people information.The teacher would discuss and demonstrate the presentation stage, consolidation stage and the closing stage. | Comprehend an effective Poster making as a tool of Visual Communication.Focus on the message to be delivered.Keep the sequence well ordered.Use graphs and images effectively.Plan and organize a poster presentation. Use spacing, margins, colours, and layout to maximize effectiveness and list information about their invention. |
|  | **AUGUST****(22 days)** |  |
| SHOULD WIZARD HIT MOMMY(Vistas) | The session would start with an interaction on Are nursery rhymes and fairy tales a reflection of reality?The title of the lesson would be open for interpretation.The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed. | The learners would be able to familiarize with specific background while tacklingpersonal choices on security, familiarity and happiness.They would be able to make connections between similar situations in personal experiences.They will be able to appreciate the timeless significance of universal fears of loss and gain, of happy ending and parenting issues |
| ON THE FACE OF IT(Vistas) | The session would start with an interaction on appearances are deceptive.The title of the story would be open for interpretation. The background of the author would be given. The prose would be read aloud and discussed. It would follow byDeveloping the format of text in sequence or discourse /spoken with reference to the global, cultural, public domains of social life. | The learners would be able tofight out their loneliness, depression and disappointment.They would accept the physically challenged people positively in their life and expand their social interaction.They would be able to build up optimism and self confidence. |
| WRITING SKILLSAdvertisement(commercial/classified) | A visual clipping of advertisements would be shown to the learners and they would interpret it through interaction.(student-student interaction)The concept, format, style and purpose would be explained with examples. | Students will learn persuasive techniques used in advertising, specifically, pathos or emotion, logos or logic, and ethos or credibility/character. They will use this knowledge to analyse advertising in a variety ofsources: print, television, and Web-based advertising. Students will also explore the concepts of demographics and marketing for a specific audience. |
| LETTER WRITING:Enquiry/ReplyOrder/Complaint/Reminder/Canc-ellation.Replies to the Letters. | The lesson consists of three stages that are outlined below:1) An ordering activity for group work with cards: Each group will be given a set of cards to order and the teacher will constantly observe and move during the activity to provide any assistance required. The correct version will then be displayed on the Green Board. 2) Find the deliberate mistakes for pair work: To vary the forms of interaction, this time the learners will be asked to work on the activity in pairs and photocopies will be provided. The correct answers will then be elicited.3) A Questionnaire through which the learner can find out how much they know about letter writing: The students can work on this individually and photocopies will be provided for this purpose. (Inductive Learning)The format, usage, purpose and style would be demonstrated with examples. | The learners will be able to express ideas fluently and chronologically, concisely without difficulty in purpose, expressions, grammar usage, format usage and relevant vocabulary.They will be able to express request/complaint/reminder/cancellation fluently and orderly without difficulty in suitable tone and expressions and relevant vocabulary. |
|  | **SEPTEMBER****(14 days)** |  |
|  | Recapitulation of Writing Skills and literature  HALF YEARLY EXAMINATION  |  |
|  | **OCTOBER** **(21 days)** |  |
| GOING PLACES(Flamingo)THE ENEMY(Vistas) | The session would begin with an interaction on Fantasy and Reality.The title of the lesson would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed.The session would start with an interactive session on the services of a doctor.The title of the lesson would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and explained. The historical background of the story and war related issues would be discussed.Difficult words would be listed out and discussed. | The learners will be able to familiarize themselves with specific background information of adolescents and adolescent fantasizing.They would identify and make connections between similar situations in own life experiences where each of us suffers dreams are not rooted to the ground of common sense and tend to be exotic, glamorous and sophisticatedThe learners will be able to familiarize themselves with specific background of political enmity.They will be able to 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.They will be able to understand the significance of professional ethics and social obligation in sensitive times. |
|  | **NOVEMBER****(20 days)** |  |
| EVAN TRIES AN O’ LEVEL(Vistas) | The session would start with an interaction on Would Education in the jails help in refining prisoners.The title of the lesson would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed  | The learners will be able to familiarize themselves with specific background of the cat and mouse role of the police and the criminal.They will be able to identify and make connections between similar situations in their own country where each of us witness the dereliction of duty of the law keepers and their complacent laxity. |
| WRITING SKILLSLetter of Job Application | The teacher would stress thestudents on the importance of application – they may lead to an interview and discuss the content of a letter of application and note the responses on the blackboard/or discuss through a PPT. | The learners will be able to understand the nature and purpose of a letter of application.They will be able to examine a variety of letters to determine best layout, content and style.They will be able to develop and produce their own letter of application and prepare cover letter and attached bio data. |
|  | **DECEMBER** **(25 days)** |  |
| MEMORIES OF CHILDHOOD(Flamingo) | The session would begin with a presentation on the great personalities who fought against social injustice.The title of the lesson would be open for class interpretation. The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed. | The learners would be able to sensitize themselves to the issues of estranged cultural ties.They will be able to make connections between similar situations in different storylines/life experiences.They will be able to initiate the role of an ambassador in the world ridden with racial and class differences.They would be able to recognize the universal/global theme of inequality. |
| AUNT JENNIFER’S TIGERS(Flamingo) | Pre-reading activity would be the first step wherein the students would delve deep into the title of the poem. The learners would make an interpretation of the title as it indicates the subject and theme. The background of the poet.would be discussed. The poem would be read aloud with proper intonation rhyme and rhythm.Difficult terms and words would be explained so that the students can predict the atmosphere of the world inside the poem. The poem would be explained covering the phrases, sentences and discourse as well as their structuring. Silent reading of the poem by the students within five minutes and listing the difficult terms. The figure of speech and rhyme scheme would be discussed. | The learners will be able to facilitate making connections between similar situations in different storylines/life experiences.They will be able to empathize with Aunt Jennifer’s problems and seek resolution.They will be able to think and produce spontaneous, fluid and expression in poetic texts to convey a social change.They would discern prevailing inequalities in various guises. |
|  | **JANUARY** **(16 days)** |  |
|  REVISION AND PREPARATION for PRE BOARD |  |  |
|  | **FEBRUARY** |  |
| RECAPITULATION and PREPARATION FOR FINAL ASSESSMENT |  |  |

**CURRICULUM (041) : 2021-22**

**SUBJECT : MATHEMATICS**

**CLASS : XII**

**Objectives :**

The aims of teaching and learning mathematics are to encourage and enable students to:

* To acquire knowledge and critical understanding, particularly by way of a motivation and visualization, of basic concepts, terms, principles, symbolsand mastery of underlying processes and skills.
* To feel the flow of reasons while proving a result and solving a problem.
* To apply the knowledge and skills acquired to solve problems and whereber possible, by more than one method.
* To develop positive attitude to think, analyze and articulate logically.
* To develop interest in the subject by participating in related competetions.
* To acquaint students with different aspects of Mathematics in daily life.
* To develop an interest in students to study Mathematics as a discipline.
* To develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.















**CURRICULUM (241) : 2021-22**

**SUBJECT : MATHEMATICS**

**CLASS : XII**

**Objectives :**

The aims of teaching and learning mathematics are to encourage and enable students to:

* To acquire knowledge and critical understanding, particularly by way of a motivation and visualization, of basic concepts, terms, principles, symbolsand mastery of underlying processes and skills.
* To feel the flow of reasons while proving a result and solving a problem.
* To apply the knowledge and skills acquired to solve problems and whereber possible, by more than one method.
* To develop positive attitude to think, analyze and articulate logically.
* To develop interest in the subject by participating in related competetions.
* To acquaint students with different aspects of Mathematics in daily life.
* To develop an interest in students to study Mathematics as a discipline.
* To develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.

**Month: APRIL No. of working days : 14**



**Month: MAY No. of working days: 23**



**Month: JULY No. of working days :25**



**Month: AUGUST No. of working days :22**



**Month: SEPTEMBER No. of working days : 14**



**Month: OCTOBER No. of working days: 21**



**Month: NOVEMBER No. of working days : 20**



CURRICULAM: 2021-22

 SUBJECT: PHYSICS

CLASS: XII

Learning objectives:

1. Strengthen the concepts developed at the secondary stage to provide frim foundation for further learning in the subject.

2. Expose the learner to different processes used in physics related industrial and technological application.

3. Develop process skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.

4. Promote problem solving abilities and creating thinking in learners .

5. Develop conceptual competence in learners and make realize and appreciate the interface of physics with other disciplines.

MONTHS: APRIL

NO. OF WORKING DAYS: 23

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| CHAPTER  | METHODOLOGY  | LEARNING OUTCAME |
| UNIT-1 electrostatics  | Lecture method/group discussion | Would be able to familiar with electric charge and coulombs law and they would be able to calculate electrostatic force between static charges. Would able to define electric field and understand its significance and able to calculate electric field due to point charges/group of point charges/electric dipole would be able to visualize electric field lines due to point charges/dipole/uniform field. Would able to define electric flux and its significance. Would able to understand gauss law and apply it to calculate electric field due to thin charged sheet/due to charge distributed over a wire/electric field inside/outside hollow sphere. Can understand the concept of electric potential and its reaction  |

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|  |  | with electric field. Would able to calculate electric potential due to point charge/group of charges/electric dipole. Would able to define capacitance of capacitor and analyze energy stored in parallel plate capacitor. Would able to analyse series/parallel combination of capacitor and energy stored in capacitor able to understand dielectric and its polarization and its effect on capacitance of parallel plate capacitor. Would able to solve numerical problem on above concepts. |

MONTHS: MAY

NO. OF WORKING DAYS: 23

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| CHAPTER  | METHODOLOGY  | LEARNING OUTCAME |
| UNIT-2 current electricity  | Lecture method/group discussion/demonstration/personalized learning | Would be able to define electric current and can distinguish between current and electricity understand why current is scalar quantity. Would be able to define drift velocity, mobility and able to establish relation between current and drift velocity. Would able to understand effect of temperature on drift velocity. Would able to interpret ohms  |

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|  |  | law and able to distinguish between resistance and resistivity. Would able to calculate resistance of carbon resistor using color code. Would able to analyse series/parallel combination of resistor and observe their application in daily life. Would able to differentiate between terminal voltage and EMF of cell and able to understand internal resistance of cell and its dependence on various factors. Would able to understand krichoffs law and use it to obtain balanced condition of wheat stone bridge. Would able to measure unknown resistance using meter bridge. Would able to measure/compare EMF of cell and internal resistance of cell using potential meter. Develop problems solving skills on above said concepts.  |
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MONTHS: JULY

NO. OF WORKING DAYS: 25

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| CHAPTER  | METHODOLOGY  | LEARNING OUTCAME |
| UNIT-3 magnetic effect of current and magnetism  | Lecture method/interactive/demonstration /PPT | Would able to understand concept of magnetic field and conclusion of orested experiment. Can state biot-savert law and apply it find magnetic field due to current carrying circular loop. Would able to state amperes law and use it to find magnetic fied due to infinitely lonf current carrying wire/solenoid/toroid. Would able to find Lorenz force/force on moving charge in uniform magnetic field. Would able to understand working of cyclotron and distinguish the role of electric field/magnetic field in working cyclotron. Would able to find force on current carrying conductor in uniform magnetic fid, force between two parallel current carrying long conductors and able to define one ampere. Would able to find torque experienced by current loop in uniform Magnetic field. Would able to understand principle working of moving coil galvanometer able to define current sensitivity, voltage sensitivity of moving coil galvanometer and conversion of MCG into voltmeter/ammeter. Would able to understand current loop as magnetic dipole, its magnetic dipole moment, magnetic dipole moment of revolving electron, magnetic field intensitydue to bar magnet along its axis line/equation line., torque on magnetic dipole in uniform magnetic field, bar magnet as equivalent solenoid, magnetic field lines, earth’s magnetic field and magnetic elements. Would able to distinguish between dai, para and ferro magnetic substances. Would able to select material/substance suitable for electromagnet/paramag net Develop solving skills on above said concepts/topics. |

MONTHS: AUGUST

NO. OF WORKING DAYS: 22

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| CHAPTER  | METHODOLOGY  | LEARNING OUTCAME |
| UNIT-4 EMI and AC  | Lecture method/interactive/demonstration/PPT | Would able to understand the concept of magnetic flux, electro magnetic induction, farday’s law, induced current, lenz law and eddy current. Would able to demonstrate self-induction/ mutual induction. Would able to understand concept of AC and distinguish between AC and DC. Would able find relation between peak value of current and rms value of current. Would able to understand  |

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|  |  | series LCR circuit, resonance, impendence, reactance power factor of AC circuits, wattless current. Would able to understand working of AC generator and transformer. Would able to define wavefront, state huygen’s principle and establish refraction of light, snells’s law using hugyen principle. Would able to understand interference of light, young double slit experiment fringes fringe width coherent sources of light diffraction due to single slit central maxima Would able to distinguish between interference of light and diffraction of light. Understand polarization of light able to demonstrate polarization using poloroid. Would able to state porewster’s law Develop problem solving skills in above said concept/topics |

MONTHS: SEPTEMBER

NO. OF WORKING DAYS: 14

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| CHAPTER  | METHODOLOGY  | LEARNING OUTCAME |
| UNIT-5 EM waves UNIT-7dual nature | Lecture method/interactive  | Would able to understand basic idea of displacement current, EM eaves, production of EM waves and their characteristics. Would able to understand electromagnetic spectrum including elementary about their uses/production. Would able to understand dual nature, photoelectric effect, Einstein photoelectric equation and particle nature of light. Can state/understand de Broglie hypothesis, de broglie waves, conclusion of division geremer experiment. |

MONTHS: OCTOBER

NO. OF WORKING DAYS: 21

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| CHAPTER  | METHODOLOGY  | LEARNING OUTCAME |
| UNIT-6 optics  | Lecture method/demonstration/PPT | Would able to understand concept of reflection of light, spherical mirror, concave mirror, convex mirror, focus, focal length, radius of curvature, mirror formula, linear magnification. Would able to understand the refraction of light and distinguish between refraction and reflection. Can interpret snell’s law, understand refraction index. Would able to demonstrate total internal reflection and observe its application in daily life. Would able to understand refraction from spherical refracting surfaces and able to establish lens maker formula and lens formula and linear magnification. Would able to observe combination of lenses in daily life and understand power of lens. Would able to understand concepts of refraction of light and dispersion through prism. Would able to understand working/magnifying power of telescope/microscope and can distinguish between them. |

MONTHS: NOVMEMBER

NO. OF WORKING DAYS: 20

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| CHAPTER  | METHODOLOGY  | LEARNING OUTCAME |
| UNIT-8 atoms and nuclei UNIT-9 electronic devices | Lecture method/interactive  | Would able to understand/interpret Rutherford and particle experiment and its conclusion. Would able to understand the bhor’s atom model, energy level and hydrogen spectrum and able to calculate wavelength corresponding to various series like lyman paschan ets. Would able to understand the  |

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|  |  | composition size of nuclei, radioactivity. Differentiate between alpha beta gamma decay and can state radioactivity decay law, half life, decay constant. Would able to interpret mass defect, bonding energy and mass energy graph. Distinguish between nuclear fission/fusion. Develop problem solving skills on above said concepts/topics. Would able to distinguish conductor, insulator and semi conductor on the basis of energy band diagram. Would able to distinguish between n –type and p- type semi conductor and understand formation PN junction. Would able to forward bias and reverse bias of PN junction and understand their working. Able to draw PI characteristics of PN junction diod in forward biased and reverse biased. Would able to understand the working of PN junction diod as half wave rectifier and full wave rectifier. Would able to understand the working of jener diod, LED, solar cell, etc. |

MONTHS: DECMEBER

NO. OF WORKING DAYS: 25

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| CHAPTER  | METHODOLOGY  | LEARNING OUTCAME |
| UNIT- 8 and UNIT-9 – revision / pre-board 1 | Test/blackboard test/interactive method | Would able to access their preparation for board exam. |
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MONTHS: JANUARY 2022

NO. OF WORKING DAYS:

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| CHAPTER  | METHODOLOGY  | LEARNING OUTCAME |
| pre-board 2  | Test exam  | Would able to access their preparation for board exam. |

CURRICULUM 2021-2022

SUBJECT CHEMISTRY

CLASS 12

OBJECTIVES

1 Promote understanding of basic facts and concepts of chemistry

2 Make students capable of studying chemistry in academic and professional courses

3 Expose the students to various emerging new areas of chemistry and apprise them with their relevance in future studies

4 Equip students to face various challenges related to health ,nutrition ,environment ,population ,weather, industries and Agriculture

5 Develop problem solving skills in students

6 Apprise students with the interface of chemistry with other disciplines of science such as Physics, Biology, engineering geology and mathematics

7 Acquaint students with different aspects of chemistry and its use in daily life

8 Develop an interest in students to study chemistry as a discipline

9 integrate life skills and values in context of chemistry

Month- April

Number of days-23

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| Chapter | Methodology | Learning outcomes |
| Solid statePractical | Lecture method Group Discussion Video based learningArt integrated learning Crystallisation of Mohr's salt | Students will be able to:* Describe general characteristics of solid state
* Distinguish between crystalline and amorphous solid
* Classify crystalline solids on the basis of of the nature of binding forces
* Define crystal lattice and unit cell
* Explain close packing of structures describe different types of voids and close packed structures
* Calculate the packing efficiency of different types of cubic unit cells
* Correlate the density of a substance with unit cell properties
* Describe the imperfections in solids and their effect on properties
* Correlate the electrical and magnetic properties of solids and their structures
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| Solutions Practical | Lecture methodGroup discussion Activity based learning Titration of potassium permanganate versus Mohr's saltTitration of potassium permanganate versus oxalic acid | Students will be able to:* Describe the formation of different types of solutions
* Express concentration of solutions in different units
* State and explain Henry's law and Raoults law
* Distinguish between ideal and non-ideal solution
* Explain deviations of real solutions from Raoults law
* Describe colligative properties of solutions and correlate with the molar masses of the solutes
* Explain abnormal colligative properties exhibited by some solutes in solution
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Month- May

Number of days-23

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| Chapter | Methodology |  Learning outcomes |
| Electrochemistry | Lecture methodPowerPoint presentation | Students will be able to:* Describe an electrochemical cell and differentiate between Galvanic cell and electrolytic cell

Apply Nernst equation for calculating the EMF of electrochemical cell and define Standard potential* Derive relation between Standard potential of the cell Gibbs energy of cell reaction and equilibrium constant.
* Define resistivity conductivity and molar conductivity of ionic solution
* Differentiate between ionic and electrolytic conductance
* Describe the method for measurement of conductivity of electrolytic solutions and calculation of their molar conductivity.
* Justify the variation of conductivity and molar conductivity of solutions with change in their concentration
* Enunciate the kohlrausch lawand its application
* Understand quantitative aspects of electrolysis
* Describe the construction of some primary and secondary batteries and fuel cells
* Explain corrosion as an electrochemical process
 |
| Chemical kineticsPractical | Lecture methodGroup discussionStudy the effect of change in concentration of sodium thiosulphate on rate of reaction | Students will be able to;* Define the average and instantaneous rate of a reaction
* Express the rate of a reaction in terms of change in concentration of either of the reactants or products with time
* Distinguish between elementary and complex reactions
* Differentiate between the molecularity and order of a reaction
* Define rate constant
* Discuss the dependence of rate of a reaction on concentration temperature and catalyst
* Derive integrated rate equation for the zero and first order reactions
* Describe collision theory
 |

Month: July

No.of days: 25

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| Chapter |  Methodology | Learning outcomes |
| Surface chemistryPractical |  Lecture methodDemonstrationGroup discussionPreparation of lyophilic solPreparation of lyophobic solPaper chromatography | Students will be able to:* Describe interfacial phenomenon and its significance
* Define adsorption and classify it into physical and chemical adsorption
* Explain mechanism of adsorption
* Explain the factors controlling the adsorption from gases and Solutions on solids
* Explain Freundlich adsorption isotherm
* Appreciate the role of catalysis in chemistry
* Enumerate the nature of colloidal state
* Describe preparation properties and purification of colloids
* Classify emulsions and describe their preparation and properties
* List the uses of colloids
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| Chapter |  Methodology | Learning outcomes  |
| Haloalkanes and haloarenes | Lecture methodDemonstrations of activities | Students will be able to:* Name haloalkanes and haloarenes according to the IUPAC system of nomenclature
* Describe the reactions involved in preparation of haloalkanes and haloarenes and understand various reactions that they undergo
* Correlate the structure of Halo alkane and haloarenes with various types of reactions
* Use stereochemistry as a tool for understanding the reaction mechanism
* Highlight the Environmental effects of polyhalogen compounds
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| Chapter | Methodology |  learning outcomes |
| Alcohols phenols and ethersPractical | Lecture methodDemonstration of activitiesIdentification of functional group alcoholic and phenolic | Students will be able to:* Name alcohols phenols and ethers according IUPAC system of nomenclature
* Discuss the reactions involved in the preparation of alcohols from alkanes and aldehydes ketones and carboxylic acid
* Discuss the reactions involved in preparation of phenols from halarenes benzene sulphonic acids diazonium salt and cumene
* Discuss the reactions for preparation of ethers from alcohols alkyl halides and sodium alkoxides
* Correlate physical properties of alcohols phenols and ethers with their structures
* Discuss chemical reactions of three classes of compounds on the basis of their functional groups
 |

Month: August

No.of Days: 22

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| Chapter |  Methodology | Learning outcomes |
| Aldehydes ketones and carboxylic acidsPractical | Lecture methodDemonstration of activitiesIdentification of aldehyde ketone and carboxylic group | Students will be able to:* Write the common and IUPAC names of aldehydes ketones and carboxylic acids
* Write the structures of the compounds containing functional groups namely carbonyl and carboxyl group
* Describe the important methods of preparation and reactions of these classes of compounds
* Correlate physical properties and chemical reactions of aldehydes ketones and carboxylic acids with their structures
* Explain the mechanism of a few selective reactions of aldehydes and ketones
* Understand the various factors affecting the acidity of carboxylic acids and their reactions
* Describe the uses of aldehydes ketones and carboxylic acids
 |
| AminesPractical | Lecture method demonstration methodIdentification of Amine functional group | Students will be able to;* Describe amines as derivatives of ammonia having a pyramidal structure
* Classify amines as Primary secondary and tertiary Amines write their IUPAC names
* Describe some important methods of preparation of amines
* Explain the properties of amines
* Distinguish between primary secondary and tertiary amines
* Describe the method of preparation of diazonium salts and their importance in the synthesis of series of aromatic compounds including azodyes
 |
| BiomoleculesPractical | Lecture methodDemonstrationMind mapsTest for carbohydrates fats and proteins indifferent foodstuffs | Students will be able to* Define the various molecules like carbohydrates proteins and nucleic acids
* Classify carbohydrates proteins nucleic acids and vitamins on the basis of their structures
* Explain the difference between DNA and RNA
* Appreciate the role of biomolecules in bio system
 |

Month September

No. of days:14

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| Chapter |  Methodology | Learning outcomes |
| General principles and processes of isolation of elementsPractical | Lecture methodGroup discussionPeer teachingIdentification of acidic and basic radicals | Students will be able to* Explain the terms minerals ores concentration benefaction calcination and roasting refining etc
* Understand the principles of oxidation and reduction as applied to the extraction procedures
* Explain why specific reducing agents are used for the reduction purposes
* Write various steps involved in extraction of aluminium copper zinc and iron
* Appreciate the importance of metallurgy in industrial processes
 |

Month October

No. of days 21

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| Chapter |  Methodology | Learning outcomes |
| Coordination compoundsPractical | Lecture methodGroup discussionIdentification of acidic and basic radical | Students will be able to* Appreciate the postulates of werner's theory of coordination compounds
* Know the meaning of terms like coordination entity central atom ligand coordination number coordination sphere oxidation number homoleptic and heteroleptic complex
* Learn the rules of nomenclature of coordination compounds
* Write the formulas and names of mononuclear coordination compounds
* Define different types of isomerism of coordination compounds
* Understand the nature of bonding in coordination compounds in terms of valence bond theory and crystal field theory
* Appreciate the importance and applications of coordination compounds in our day to day life
 |
| The p block elementsPractical | Lecture methodQuestioning and answering techniqueIdentification of acidic and basic radical | Students will be able to* Appreciate general trends in chemistry of elements of group

15 16 17 and 18* Learn the preparation properties and uses of dinitrogen and phosphorus and some of their important compounds
* Describe the preparation properties and uses of dioxygen and ozone and Chemistry of some of simple oxides
* Describe allotropic forms of sulphur chemistry of its important compounds and the structure of oxoacids
* Describe the preparation properties and uses of chlorine and hydrochloric acid
* Know the chemistry of interhalogens and structure of oxoacids of halogens
* Enumerate the uses of noble gases and appreciate the importance of these elements and their compounds in our daily life
 |
| Polymers | Lecture methodGroup discussionPeer teaching | Students will be able to* Explain the terms monomer polymer and polymerization and appreciate their importance
* Distinguish between various classes of Polymers and different types of polymerization processes
* Appreciate the formation of polymers from mono and bi functional monomer molecules
* Describe the preparation of some important synthetic Polymers and their properties
* Appreciate the importance of polymers in daily life
 |

Month: November

No. Of days: 20

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| Chapter | Methodology |  Learning outcomes |
| The d and f block elements | Lecture methodGroup discussionPeer teaching | Students will be able to* learn position of d and f block elements in the periodic table
* Know the electronic configuration of transition elements and inner transition elements
* Appreciate the relative stability of various oxidation states in terms of electrode potential values
* Describe the preparation properties structures and uses of some important compounds like potassium dichromate and potassium permanganate
* Understand the general characteristics of d and f block elements and their general horizontal and group ttends
* Describe the properties of the F block elements and give comparative account of lanthanides and actinoids with respect to their electronic configuration Oxidation state and chemical behaviour
 |
| Chemistry in everyday life | Lecture methodGroup discussion |  Students will be able to* Visualise the importance of Chemistry in daily life
* Explain the term chemotherapy
* Describe the basis of classification of drugs
* Explain drug target interaction of enzymes and receptors
* Explain how various types of drugs function in the body
* Know about artificial sweetening agents and food preservatives
* Discuss the chemistry of cleansing agents
 |

Month: December

No.of working days:25

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| Revision |  |  |
| Practice test |  |  |

Month January

No. Of days: 16

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| Revision |  |  |
| Pre board exams |  |  |

Month:Feburary

No of days:15

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| Revision |  |  |
| Practicals for boards |  |  |

 **CURRICULAM 2021-22**

**SUBJECT- BIOLOGY**

**CLASS- XII**

**LEARNING OBJECTIVES-**

1- Define basic biological concepts and processes.

2- Describe levels of organization and related functions in plants and animals.

3- Describe the intricate relationship between various cellular structures and their corresponding functions.

4- Demonstrate critical thinking skills.

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| **MONTH –APRIL NO. OF WORKING DAYS- 23** |
| **CHAPTER** | **METHODOLOGY** | **LEARNING OUTCOMES** |
| 1. Reproduction in Organisms | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Acquire the concept of internal and external fertilization.
* Concept of seed and fruit formation will be developed.
* Will acquire the concept of various Vegetative propagation and their types.
 |
| 2. Sexual Reproduction in Flowering Plants. | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Acquire the knowledge to identify various flowers pollinated by various agencies.
* Development of special modes of fruit formation and its key concepts.
* Concept of endosperm formation and its importance.
 |
| 3- Human Reproduction | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Students will be able to understand the concept of spermatogenesis and oogenesis and various hormonal changes occurring during it.
* Will know the various stages of implantation and its affect on uterus.
* Role of placenta and placental hormones during pregnancy.
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| **MONTH –MAY NO. OF WORKING DAYS- 23** |
| **CHAPTER** | **METHODOLOGY** | **LEARNING OUTCOMES** |
| 3- Human Reproduction (CONTD.) |  |  |
| 4-Reproductive Health | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Students will be aware of various methods which are developed to combat infertility.
* Use of contraceptions and their effect on body
 |
| **CHAPTER** | **METHODOLOGY** | **LEARNING OUTCOMES** |
| 5- Principles of Inheritance and Variations | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Concept building on mendelian genetics.
* Various attributes of mendelian and chromosomal disorders.
* Blood groups and their role in various organisms.
* Role of mutation and its affect can be studied.
* . Family diseases can be studied with the help of pedigree analysis chart.
 |
| **MONTH - JULY NO. OF WORKING DAYS- 25** |
| **CHAPTER** | **METHODOLOGY** | **LEARNING OUTCOMES** |
| 6-Molecular Basis of Inheritance | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Concept of DNA and its structure is developed.
* DNA packaging and its applications.
* Genetic code and its relation with protein synthesis.
 |
| 7- Evolution | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Concept building on various theories of evolution
* Knowledge about evolution ,its patterns and evidences of evolution
* Strategies of hardy Weinberg principle.
* Deviations from Hardy Weinberg principle.
* Knowledge of evolution of plants and animals.
 |
| 8-Human Health and Diseases | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Knowledge of how diseases are spread will be developed.
* Concept of personal hygiene and its importance will be developed.
* Drugs and misuse will be administered.
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| **MONTH - AUGUST NO. OF WORKING DAYS- 22** |
| **CHAPTER** | **METHODOLOGY** | **LEARNING OUTCOMES** |
| 9-Strategies for Enhancement of Food Production | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Different strategies of food production will be known
* Strategies for food production and hybridization
* Importance of animal husbandry
 |
| 10-Microbes in Human Welfare | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * Know the importance of microbes in day to day life.
* Role of antibiotics, its use and its manufacture.
* Role of microbes an biocontrol agents.
 |
| **MONTH - SEPTEMBER NO. OF WORKING DAYS- 14** |
| **CHAPTER** | **METHODOLOGY** | **LEARNING OUTCOMES** |
| 10- Microbes in Human Welfare (CONTD.) & Revision | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * The learner will by now honed the skills and habit of recapitulation.
* Plan a revision course for better implementation of lessons learnt
* Develop a confidence in approaching Examination
 |
| **MONTH - OCTOBER NO. OF WORKING DAYS- 21** |
| **CHAPTER** | **METHODOLOGY** | **LEARNING OUTCOMES** |
| 11-Biotechnology : Principles andProcesses | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | The students will be able to –* Know the concept of biotechnology and its applications.
* How this can be used in different methodologies
* Formation and implications of rDNA
 |
| 12-Biotechnology and Its Application | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 |  The students will be able to understand the* concept of gene therapy and its applications in various diseases
* The use of various GMOs and their benefit to organisms.
 |
| 13- Organisms and Populations. | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 |  The students will be able to-* Relate the various kinds of population interactions
* Population characteristics and its estimation will be known.
* Concept of habitat and niche will be broadened.
 |
| **MONTH - NOVEMBER NO. OF WORKING DAYS- 20** |
| **CHAPTER** | **METHODOLOGY** | **LEARNING OUTCOMES** |
| 14- Ecosystem | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | The students will be able to understand-* The concept of primary and secondary productivity will be developed.
* Ecological succession and its application
* Nutrient cycling and its impact on environment.
* Energy flow and its estimation via 10% law
 |
| 15- Biodiversity and its Conservation | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | The students will be able to-* Differentiate between various conservation strategies.
* Knowledge of red data book will be enhanced.
* Identification of biodiversity hot spots
 |
| 16-Environmental issues | * Demonstration and Lecture method
* Pupil centered method (inside the class)
 | * The students will be able to-
* Know the various kinds of wastes and their modes

 of disposal.* Green house Effect and its impact.
* Management of radioactive wastes.
 |
| **MONTH - DECEMBER**  **NO. OF WORKING DAYS- 25****REVISION and PERIODIC II** |
| **MONTH-JANUARY (16)days** | **PRACTICE EXAM II** |  |
| **MONTH- FEBRUARY (15)days** | **BOARD EXAMS** |  |
| **MONTH-MARCH** | **BOARDEXAMS** |  |

**DAV PUBLIC SCHOOL BRIJ VIHAR GHZ UP**

**CURRICULUM 2021-22 CLASS12**

**ECONOMICS**

**Learning Objectives:**

Understanding of some basic economic concepts and development of economic reasoning which learners can apply in day to day life.

Realisation of learners role in Nation building.

Equipment with basic tools of economics to analyse economic issues.

Development of understanding that there can be more than one view on any economic issue and necessary skills to argue logically with reasoning.

Number of working days April 2021 - 23 days

| TOPIC | METHODOLOGY | LEARNING OUTCOMES |
| --- | --- | --- |
| Development Policies And Experience (1947-1990)Indian Economy On The Eve Of Independence | To Familiarise the students about the state of the Indian Economy in 1947 Write the bullet points on the black board and discuss all the points in classFactors that led to the underdevelopment and stagnation of the Indian Economy will be asked from students and they will be asked to make a flow chart of it | Understanding the economy before independence British policies were more with the protection and promotion of British economic interests .The rule of British India govt led to collapse of Indian agriculture ,industryAt the time of independence the social and Economic challenges before the country were large. |
| Indian Economy 1950-1990 | Economic system that Indian Economy adopted will be discussed in classEconomic planning and its objectives will be explained using blackboardGoals of five year planning will be explained using flow chart Green Revolution in agriculture sector will be discussed and how it helped India to become self-sufficient in food grain production.Various policies will be explained which raised contribution of industrial sector in GDP.Concept of inward looking trade policy will be discussed and strategy of import substitution and export promotion will be explained  | After Independence India adopted Mixed Economic system All economic planning is done through five year plans.Dependence on agriculture was very large .Main policy measures in Agriculture were green revolution and land reforms.The Main drawback in industrial sector was insufficient functioning of the public sector Our ponies were inward oriented and so we failed to develop strong export sector. |
| Economic Reforms since 1991 | Relating previous chapters with this chapter discussing the condition of the Indian Economy due to which economic reforms were introducedThe mechanism will be discussed through reforms will be introducedElements of NEP will be explained through flow charts Real life Indian economic egs will be taken to explain the reforms introduced during liberalization, Globalisation,demonetisation and GST | India was facing an economic crisis due to which NEP was adoptedMany domestic reforms were introduced in industrial and financial sectorRole of Public sector was reduced and many private sector companies were given chanceOutsourcing emerged as business activity.Reasons for demonetization and GST and how far it impacted Economics. |

Number of working days in May 2021 - 23 days

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| Current Challenges facing Indian EconomyPOVERTY | Meaning of Poverty will be explained connecting it with unemploymentStudents will be asked various reasons of poverty and flow diagram will be made to chalk out all reasonsVarious reasons of rural poverty and urban poverty will be taken up by Connecting them to real life situations faced by our economyStudents will be asked to find out various initiatives taken by Govt to reduce poverty and they will be discussed in classImpact of covid19 on poverty will also be taken up in class | Major challenge faced by Indian economy is poverty Differentiate between Absolute and Relative povertyComprehend the diverse dimensions relating to the concept of povertyTo assess how far the poverty alleviation programs have been able to solve the problem of povertyNeed to create more employment our country |
| HUMAN CAPITAL FORMATION | Meaning of Human Capital will be explained by discussing role of factors of production Discussion on similarities between physical capital and human capital will be discussed in the classStudents will be asked how human capital formation takes place Flow chart on sources of Human Capital will be made on the back Board and students will be asked to talk about them.A relation ship of Human capital with Human Development and Economic growth will be explained by taking examplesA discussion on what needs to be done by Govt to Improve Human capital formation will be done with students and suggestions will be asked from them | Understand the meaning of Human Capital and Physical CapitalDifferentiate between Human capital Human development How Human Capital formation can be improved in IndiaWhat are the steps taken by the Govt to Improve human capital formation |

**NOTE:**

Project work will be discussed in the class and the guidelines will be given to students to complete the project work during summer vacations.

Number of working days July 2021 - 25 days

| TOPIC | METHODOLOGY | LEARNING OUTCOMES |
| --- | --- | --- |
| RURAL DEVELOPMENT | Initially the condition of the rural sector will be discussed with the studentsA flow chart will be made on the important features of rural sector in our countryas suggested by studentsRural Development in India InfrastructureRural creditAgriculture MarketingWarehousing facilitiesInsurance and risk managementAll these will be taken up by help of case studiesStudents will be asked about new development avenues in rural areas | Enable to explain the term rural developmentChalk out the features of rural development in IndiaSuggest measures to Improve condition of rural development through infrastructure developmentImproving rural credit, marketing facilities, warehousing facilitiesThe students will be able to suggest various avenues to improve condition of rural sector  |
| EMPLOYMENT-GROWTH INFORMALISATION AND OTHER ISSUES | Explain the basic concept related unemployment  Students will be given examples to differentiate between worker workforce and unemploymentDifferent types of unemployment will be explained by siting various examples to studentsCase studies will be taken up on govt initiative on generating employment Initiative taken by the Govt during the situation of covid19 to generate employment | Understand a few basic concepts relating to employment Relate the concept of worker ,workforce and unemploymentExplain the nature of participation of men and women in various economic activitiesKnow the nature and extent of unemployment in IndiaTo analyse the initiative taken by Govt to generate employment in various sectors of the economy. |
| INFRASTUCTURE | Few examples will be taken up in class to explain the concept of economic and social infrastructureFlow chart will be used to explain the relevance of infrastructureVarious sources of energy will be discussed in class and students will be asked to showcase the sources of energy through Art IntegrationProblems faced by the health sector will be taken up and will be discussed with students Solution to the Problems faced by health sector will be asked from the students | Differentiate between economic and social infrastructureUnderstand the main challenges India faces in the area of social and economic infrastructureInterconnect the role of infrastructure with economic developmentUnderstand the role of energy and health as a critical component of infrastructureChalk out the problems faced by energy and health sector Critically appraise the problems of health and energy in India |
| ENVIRONMENT AND SUSTAINABLE DEVELOPMENT | Topic will be started with egg of Biotic and Abiotic elements of environment Students will be asked examples for the same Flow chart will be used to relate growth with degradation of environmentStrategy of sustainable development will be discussed and students views will be asked on the issue  | Understand the concept of Environment Chalk out the causes and effect of environmental degradation and resource depletionUnderstand the Environmental challenges faced by IndiaEnable to relate environmental issues to the larger context of sustainable development |

Number of working days August 2021 - 22 days

| TOPIC | METHODOLOGY | LEARNING OUTCOMES |
| --- | --- | --- |
| INDIA AND ITS NEIGHBOURS:DEVELOPMENT EXPERIENCE | Discussing the latest scenario with students about relation of India with China and PakistanStudents will be told how not only India struggled in its journey of independence but also China and Pakistan also did the same Historical path of all 3 countries will be taught with the help of table mentioning various indicators in the table Comparative study of all 3 countries will be done using data and case studies | Enable students to comprehend the history of development of 3 nations Chalk out the struggles faced by the 3 country's in their path of developmentEnable them to compare the development indicators of the 3 countries and conclude which country is in the best position |
| MACRO ECONOMIC THEORYNATIONAL INCOME AND RELATED AGGREGATES | Starting by relating micro with macro EconomicsTaking examples to explain the concept of macroeconomicsUsing black board to differentiate between micro macro economics in tabular formMeaning of various NI concepts will be explained with help of examplesDiagrams will be used to explain the topic of real flow and money flowBasic National Income Aggregates will be explained by formulating formulas on black board All the three methods of measuring National Income will be done through numerical examples on black boardConcept of real and nominal GDP will be explained relating it to NI At constant and current prices | Differentiate between micro macro economicsSite examples on micro and macro economicsEnable them to draw circular flow of national incomeStudents will be able to formulate the national income formulasEnable them to solve the numerical based on the three methodsDifferentiate between real and nominal GDP |

Number of working days September 2021 - 14 days

| TOPIC | METHODOLOGY | LEARNING OUTCOMES |
| --- | --- | --- |
| MONEY AND BANKING | Starting the chapter by discussing about medium of exchange during historical time till British period Asking students about drawbacks of bater system over money system Prompting students to tell about functions of money Asking students what are the components of Money SupplyTaking numerical example the concept of credit creation by commercial banks will be explainedFunctions of central banks will be taken up and day to day examples will be taken up to explain the concept | Chalk out draw backs of barter system Explain functions of moneyName the components of money supplyEnable them to numerically explain credit creation by commercial banksEnable the students to chalk out steps taken by the central banks to control situation of money supply in the economy |
| Revision for Half Early |  |  |

Number of working days October 2021 - 21 days

| TOPIC | METHODOLOGY | LEARNING OUTCOMES |
| --- | --- | --- |
| GOVERNMENT BUDGET AND THE ECONOMY | Meaning of govt budget will reexplained in line with budget made by a familyObjectives of budget will be explained with lecture method Flow chart will be used for explaining components of budgetVarious examples will be given to students to classify them into various categoriesTypes of budget will be taken up and various types of deficit in the budget will be discussed Numerical examples will be taken up to explain how to calculate deficit in the budget | Student will be able to understand why budgeting for a govt is important Enable them to classify various budget receipts and expenditures into budget receipts and expendituresEnable students to calculate deficit in the budget |
| BALANCE OF PAYMENT AND FOREIGN EXCHANGE RATE | Taking example of goods traded outside and purchased will be used to explain concept of BOPFlow chart will be used to explain components of BOPUsing components BOP current A/C and capital A/C will be explainedStudents will be prompted to give reasons for disequilibrium in BOP and measures will be discussedStudents will be given a situation where they had to purchase goods from abroad taking this as a base foreign exchange rate will be explainedUsing diagram determination of foreign exchange rate will be explainedComparative study of various exchange rates will be done using table on blackboard | Define meaning of BOPChalk out the components of BOPDifferentiate the concept of current and capital A/CGive reasons for disequilibrium in BOPDraw diagram how exchange rate is determined by DD and SS factorsDifferentiate between fixed and flexible exchange rate |

Number of working days November 2021 - 20 days

| TOPIC | METHODOLOGY | LEARNING OUTCOMES |
| --- | --- | --- |
| DETERMINATION OF INCOME AND EMPLOYMENT | Students will be familiarize with concepts of AD and AS relating to demand and supplyComponents of AD will be taken up using equation and diagram (consumption function, saving function and Investment function)Derivation of consumption curve from saving curve will be explained by drawing it on black boardNational Income level and Equilibrium level of income through saving and Invt and AD and AS approach will be explained using schedule and diagramInvestment Multiplier will be explained by taking numerical example and diagramExcess Demand/Inflationary gap and Deficient Demand/Deflationary gap will be explained using diagramNumericals on equilibrium level of Income consumption, saving and investment will be explained on the black board | Understand the meaning of AD and ASStudents will be able to write equation of AD and AS and draw the curves for consumption saving and invtStudents will be able to do numerical based on APC APS MPC MPS Students will be able to locate equilibrium level of income by S and I approach and AD and AS approachNumerically calculate Y, C, I ,S Multiplier and locate all on the diagram also |

**December 2021:**

Determination of Income and Employment will be continued for a week and for the rest of the days revision for practice examination.

**January 2022:**

Sample question paper will be discussed and another practice exam will be taken.

**Curriculum 2021-22**

**Subject: Accountancy**

**Class: XII**

**Learning Objectives**

1.To familiarize students with new and emerging areas in the preparation and presentation of financial statements.

2. To acquaint students with basic accounting concepts and accounting standards.

3. To develop the skills of designing need-based accounting database.

4. To appreciate the role of ICT in business operations.

5. To develop an understanding about recording of business transactions and preparation of financial statements.

6. To enable students with accounting for Not-for-Profit organizations, accounting for Partnership Firms and company accounts

**Month & No. of working Days: April, 23 Days**

To acquaint students with basic accounting concepts and accounting standards.

|  |  |  |
| --- | --- | --- |
| Chapter | Methodology | Learning |
| Part-BUnit 4-Analysis of Financial Statement | Mind MapsStory Telling | **After going through this Unit, the students will be able to:**• develop the understanding of major headings and sub-headings (as per Schedule III to the Companies Act, 2013) of balance sheet as per the prescribed norms / formats.• state the meaning, objectives and limitations of financial statement analysis. • discuss the meaning of different tools of 'financial statements analysis'. • develop the understanding and skill of preparation of comparative and common size financial statements. • state the meaning, objectives and significance of different types of ratios. • develop the understanding of computation of current ratio and quick ratio. • develop the skill of computation of debt equity ratio, total asset to debt ratio, proprietary ratio and interest coverage ratio.develop the skill of computation of inventory turnover ratio, trade receivables and trade payables ratio and working capital turnover ratio. • develop the skill of computation of gross profit ratio, operating ratio, operating profit ratio, net profit ratio and return on investment. |

**Month & No. of working Days: May, 23 Days**

|  |  |  |
| --- | --- | --- |
| Chapter | Methodology | Learning |
| Unit 5- Cash Flow Statement | Mind MapsStory Telling | **After going through this Unit, the students will be able to**: • state the meaning and objectives of cash flow statement. • develop the understanding of preparation of Cash Flow Statement using indirect method as per AS 3 with given adjustments. |
| Project Work |  |  |

**Month & No. of working Days: July, 25 Days**

|  |  |  |
| --- | --- | --- |
| Chapter | Methodology | Learning |
| Part-AUnit 3- Accounting for Companies | Mind mapsStory tellingRole Play | **After going through this Unit, the students will be able to:** • state the meaning of share and share capital and differentiate between equity shares and preference shares and different types of share capital. • understand the meaning of private placement of shares and Employee Stock Option Plan. • explain the accounting treatment of share capital transactions regarding issue of shares. • develop the understanding of accounting treatment of forfeiture and re-issue of forfeited shares. • describe the presentation of share capital in the balance sheet of the company as per schedule III part I of the Companies Act 2013. • explain the accounting treatment of different categories of transactions related to issue of debentures. • develop the understanding and skill of writing of discount / loss on issue of debentures. • understand the concept of collateral security and its presentation in balance sheet. • develop the skill of calculating interest on debentures and its accounting treatment.state the meaning of redemption of debentures. • develop the understanding of accounting treatment of transactions related to redemption of debentures by lump sum, draw of lots and Creation of Debenture Redemption Reserve. |

**Month & No. of working Days: August, September, October, (57 Days)**

|  |  |  |
| --- | --- | --- |
| Chapter | Methodology | Learning |
| Part-AUnit 2- Accounting for Partnership Firms | Mind mapsStory tellingRole play | **After going through this Unit, the students will be able to:** • state the meaning of partnership, partnership firm and partnership deed. • describe the characteristic features of partnership and the contents of partnership deed. • discuss the significance of provision of Partnership Act in the absence of partnership deed. • differentiate between fixed and fluctuating capital, outline the process and develop the understanding and skill of preparation of Profit and Loss Appropriation Account. • develop the understanding and skill of preparation profit and loss appropriation account involving guarantee of profits. • develop the understanding and skill of making past adjustments. • state the meaning, nature and factors affecting goodwill • develop the understanding and skill of valuation of goodwill using different methods. • state the meaning of sacrificing ratio, gaining ratio and the change in profit sharing ratio among existing partners. • develop the understanding of accounting treatment of revaluation assets and reassessment of liabilities and treatment of reserves and accumulated profits by preparing revaluation account and balance sheet. • explain the effect of change in profit sharing ratio on admission of a new partner. • develop the understanding and skill of treatment of goodwill, treatment of revaluation of assets and re-assessment of liabilities, treatment of reserves and accumulated profits, adjustment of capital accounts and preparation of balance sheet of the new firm. • explain the effect of retirement / death of a partner on change in profit sharing ratio. • develop the understanding of accounting treatment of goodwill, revaluation of assets and re-assessment of liabilities and adjustment of accumulated profits and reserves on retirement / death of a partner and capital adjustment. • develop the skill of calculation of deceased partner's share till the time of his death and prepare deceased partner's executor's account. • discuss the preparation of the capital accounts of the remaining partners and the balance sheet of the firm after retirement / death of a partner. • understand the situations under which a partnership firm can be dissolved. • develop the understanding of preparation of realisation account and other related accounts. |

**Month & No. of working Days: November, 20**

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| Chapter | Methodology | Learning |
| Part-AUnit 1- Financial Statement of Non-for-Profit Organizations | Mind mapsStory telling | **After going through this Unit, the students will be able to:** • state the meaning of a Not-for-profit organisation and its distinction from a profit-making entity. • state the meaning of receipts and payments account and understanding its features. • develop the understanding and skill of preparing receipts and payments account. • state the meaning of income and expenditure account and understand its features. • develop the understanding and skill of preparing income and expenditure account and balance sheet of a not-for-profit organisation with the help of given receipts and payments account and additional information. |

**Month & No. of working Days: December, January, February, 56 Days**

* Revision of chapters and discussion on previous 5 years question papers (CBSE)

**Curriculum 2021-22**

**Subject: Business Studies**

**Class: XII**

**Learning Objectives**

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

**Month & No. of working Days: April, 23 Days**

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| Chapter | Methodology | Learning |
| Part-BUnit-11- Marketing management | Mind Maps, storytelling, Case studies & Role Play | **After going through this Unit, the students will be able to:**• Understand the concept of marketing. • Explain the features of marketing. • Discuss the functions of marketing. • Explain the marketing philosophies. • Understand the concept ofmarketing mix. •Describe the elements of marketingmix. •Understand the concept of product as an element of marketing mix. • Understand the concept of branding, labelling and packaging.• Understand the concept of price as an element of marketing mix. • Describe the factors determining price of a product.• Understand the concept of physical distribution. • Explain the components of physical distribution. • Describe the various channels of distribution. • Understand the concept of promotion as an element of marketing mix. • Describe the elements of promotion mix. • Understand the concept of advertising. • Understand the concept of sales promotion. • Discuss the concept of public relations. |
| Unit-12- Consumer protection | Mind Maps, storytelling, Case studies & Role Play | • Understand the concept of consumer protection. • Describe the importance of consumer protection. • Discuss the scope of Consumer Protection Act, 2019 Understand the concept of a consumer according to the Consumer Protection Act, 2019. • Explain the consumer rights • Understand the responsibilities of consumers • Understand who can file a complaint and against whom? • Discuss the legal redressal machinery under Consumer Protection Act, 2019. • Examine the remedies available to the consumer under Consumer Protection Act, 2019 Describe the role of consumer organizations and NGOs in protecting consumers’ interests. |

**Month & No. of working Days: May, 23 Days**

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| Chapter | Methodology | Learning |
| Part-BUnit-9 Financial Management | Mind Maps, storytelling, Case studies & Role Play | **After going through this Unit, the students will be able to:**• Understand the concept of financial management. • Explain the role of financial management in an organisation. • Discuss the objectives of financial management Discuss the three financial decisions and the factors affecting them. • Describe the concept of financial planning and its objectives. • Explain the importance of financial planning. Understand the concept of capital structure. • Describe the factors determining the choice of an appropriate capital structure of a company. • Understand the concept of fixed and working capital. • Describe the factors determining the requirements of fixed and working capital. |
| Unit-10 Financial Market | Mind Maps, storytelling, Case studies & Role Play | • Understand the concept of financial market. • Explain the functions of financial market. • Understand capital market and money market as types of financial markets. • Understand the concept of money market. • Describe the various money market instruments. • Discuss the concept of capital market. • Explain primary and secondary markets as types of capital market. • Differentiate between capital market and money market. • Discuss the methods of floating new issues in the primary market. • Distinguish between primary and secondary markets Give the meaning of a stock exchange. • Explain the functions of a stock exchange. • Discuss the trading procedure in a stock exchange. • Give the meaning of depository services and demat account as used in the trading procedure of securities. State the objectives of SEBI. • Explain the functions of SEBI. |
| Project Work |  |  |

**Month & No. of working Days: July, 25 Days**

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| Chapter | Methodology | Learning |
| Part-AUnit-1 Nature and significance of management | Mind Maps & Role Play | **After going through this Unit, the students will be able to:**• Understand the concept of management. • Explain the meaning of ‘Effectiveness and Efficiency. • Discuss the objectives of management. • Describe the importance of management.• Examine the nature of management as a science, art and profession. Understand the role of top, middle and lower levels of management • Explain the functions of management Discuss the concept and characteristics of coordination. • Explain the importance of coordination |
| Unit-2 Principles of management | Mind Maps & Role Play | • Understand the concept of principles of management. • Explain the significance of management principles. • Discuss the principles of management developed by Fayol. Explain the principles and techniques of ‘Scientific Management’. • Compare the contributions of Fayol and Taylor. |

**Month & No. of working Days: August, 22 Days**

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| Chapter | Methodology | Learning |
| Part-AUnit-3 Business Environment | Mind Maps, storytelling, Case studies | **After going through this Unit, the students will be able to:**• Understand the concept of ‘Business Environment’. • Describe the importance of Business Environment • Describe the various dimensions of ‘Business Environment’. • Understand the concept of Demonetization Examine the impact of government policy changes on business in India with reference to liberalisation, privatization and globalisation since 1991. • Discuss the managerial response to changes in business environment. |
| Unit-4 Planning | Mind Maps, Role Play, Case studies | • Understand the concept of planning. • Describe the importance of planning. • Understand the limitations of planning. • Describe the steps in the process of planning. •Develop an understanding of single use and standing plans. • Describe objectives, policies, strategy, procedure, method, rule, budget and programme as types of plans. |

**Month & No. of working Days: September, 14 Days**

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| Chapter | Methodology | Learning |
| Part-AUnit 5- Organizing | Mind Maps, storytelling | **After going through this Unit, the students will be able to:**• Understand the concept of organizing as a structure and as a process. • Explain the importance of organising. Describe the steps in the process of organising. • Describe functional and divisional structures of organisation. • Explain the advantages, disadvantages and suitability of functional and divisional structure. • Understand the concept of formal and informal organisation. • Discuss the advantages and disadvantages of formal and informal organisation. Understand the concept of delegation. • Describe the elements of delegation. • Appreciate the importance of delegation. Understand the concept of decentralisation. • Explain the importance of decentralisation. • Differentiate between delegation and decentralisation. |

**Month & No. of working Days: October & November, 41 Days**

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| Chapter | Methodology | Learning |
| Part-AUnit 6- Staffing  | Mind Maps, storytelling, Role Plays & Case studies | **After going through this Unit, the students will be able to:**• Understand the concept of staffing. • Explain the importance of staffing • Understand the specialized duties and activities performed by Human Resource Management • Describe the steps in the process of staffing Understand the meaning of recruitment. • Discuss the sources of recruitment. Explain the merits and demerits of internal and external sources of recruitment. Understand the meaning of selection. • Describe the steps involved in the process of selection. Understand the concept of training and development.• Appreciate the importance of training to the organisation and to the employees. • Discuss the meaning of induction training, vestibule training, apprenticeship training and internship training. • Differentiate between training and development. • Discuss on the job and off the job methods of training. |
| Unit 7 Directing | Mind Maps, storytelling, Role Plays & Case studies | • Describe the concept of directing. • Discuss the importance of directing Describe the various elements of directing Understand the concept of motivation. • Develop an understanding of Maslow’s Hierarchy of needs. • Discuss the various financial and non-financial incentives. Understand the concept of leadership. • Discuss the various styles of leadership. Understand the concept of communication • Understand the elements of the communication process. • Discuss the concept of formal and informal communication. • Discuss the various barriers to effective communication. • Suggest measures to overcome barriers to communication. |
| Unit-8 Controlling | Mind Maps, storytelling, Role Plays & Case studies | • Understand the concept of controlling. • Explain the importance of controlling -Describe the relationship between planning and controlling -Discuss the steps in the process of controlling |

**Month & No. of working Days: December, January & February, 56 Days**

* Revision of chapters and discussion on previous 5 years question papers (CBSE)

## **CURRICULUM 2021-22**

## Subject- Physical Education

Class- XII

Learning Objectives-

1. Creating new knowledge
2. Developing feelings and emotions
3. Enhancing physical and mental skills

Month (and Number of days) - April to November (148 days)

April to May (46 days)

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| S No. | Chapter | Methodology | Learning Outcomes |
| 1 | Planning in sports | * Lecture method
* Chalk & Board
* Instructional method
* Discussion method
 | Planning is important to conduct a successful competition. |
| 2 | Sports and nutrition  | * Lecture method
* Discussion method
 | Importance of balanced diet and nutrition for body. |

July to August (47 days)

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| S No. | Chapter | Methodology | Learning Outcomes |
| 3 | Yoga and lifestyle | * Lecture method
* Instructional method
* Discussion method
 | Asanas as preventive measures. |
| 4 | Physical education and sports for CWSN | * Lecture method
* Discussion method
 | To understand the concept of disability and disorder. |
| 5 | Children and women in sports | * Lecture method
 | Motor development and factors affecting it. |

September to October (35 days)

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| 6 | Test and measurement in sports | * Lecture method
* Demonstration method
 | Need and importance of test and measurement in sports. |
| 7 | Physiology and injuries in sports | * Lecture method
* Discussion method
 | Physiological factors determining components of physical fitness. |
| 8 | Biomechanics and sports | * Lecture method
* Instructional method
 | Importance of biomechanics in sports. |

 November (20 days)

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| 9 | Psychology in sports | * Lecture method
* Discussion method
 | Role of psychology in sports performance. |
| 10 | Training in sports | * Lecture method
* Discussion method
 | Different training programmes for physical fitness. |

Subject : Music Vocal

Class: XII

Learning Objectives:-

1. Learn Vocal Music
2. Short and Long Definitions in Hindi and English

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| CONTENT | METHODOLOGY  | LEARNING OUTCOME |
| April:- 28 Periods;Brief study of the following definitions. Alankar, Kan, Meend, Khatka, etc.Practical:- Raag Bharav Dhrut Khyal | Lecture Method and given some short questions.Memorizing the Raag. | Students learned short definitions.Developing singing skills |
| May:- 26 Periods;Long definitions and introduction to Raag Bharav, Malkauns, Raag Bageshri.Practical:- Aalap and Taan in Raag Bharav | Lecture Method and write Raag Bharav notation.Aalap and Taan in Raag Bharav. | Students know how to write notation of Raag.Honing the singing skills. |
| July:- 25 Period;Historical development of Time theory of RaagasPractical:- Rupak Taal with hand beats. | Lecture Method.All Taalas with hand beats – Thah, Dugun, Chaugun. | Students learned how to divide time of RaagasHoning the Taal skills. |
| August:- 22 Periods;Detail study of Sangeet Ratnakar and Sangeet ParijaatPractical:- Raag Malkauns and Raag Bageshri. | Lecture Method.Write complete descriptions and their importance.Taan and Aalap. | Students came to know the importance of these books.Developing rythematic sense. |
| September:- 14 Periods;Life sketch and contribution of musicians.Practical:- Tarana or Dhamaar | Lecture Method.Students wrote life sketches of vocalists and their works.Laykari – Thah, Dugun and Chaugun. | Students collected their photographs and learned how to improve classical music.Developing the sense of Sur and Taal. |
| October:- 21 Periods;Taalas along with Taal notations.Practical:- Dhamaar Taal with Laykari. | Lecture Method.Write Taala notations.Learn Taal with hand beats.  | Students will know how to write Laykari.Developing the sense of Taal Beats. |
| November:- 20 Periods;Tuning of Tanpura.Practical: - Playing of Tanpura. | Lecture and Demo Method. | Students learned the basic knowledge of Classical Music by Tanpura. |
| December:- 25 Periods;Recognizing of Raagas.Practical: Identification of Raagas. | Lecture and Demo Method. | Students will be able recognize the Raagas and their Swar. |
| January:- 16 Periods;Revision of full syllabus | More practise for perfection. | Students prepared themselves for theory and practical examination. |
| February:- 15 Periods;Preparations for Practical and Theory Examination. | More practise for perfection. | Garnished the Vocal Music subject. |

***Curriculum – 2021-2022***

***SUB- FINE ARTS***

***CLASS- 12TH***

***LEARNING OBJECTIVES*** -

* The objective of including the history of Indian arts for the student is to familiarize them with the various styles and modes of art expressions from different parts of India. This would enrich their vision and enable them to appreciate and develop an aesthetic sensibility to enjoy the beauty of nature and life. The students will also have an opportunity to observe and study the evolution of its mutations and synthesis with other style an altogether new style. The students should be made aware of art as human experience. The teacher should be able to expose them to the wide range of artistic impressions, the media, the tool used. The history of Indian art is a long one. Hence the students will be acquainted with brief glimpses of the development Indian visual arts as are required for concept formation.
* The purpose of introducing practical exercises is to help and enable the students to develop the skills using drawing and painting material, to sharpen their observation skills, to express the different feelings and moods of life and nature in lines.

***April-May***

***Topic learning Methodology*** ***Learning Outcome***

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| Introduction of miniature painting and the whole syllabus of the history of Indian arts. | The previous syllabus of class 11th will be discussed and make the students aware about the miniature paintings and murals different paintings will be shown from Rajasthan and will be discussed in the class. | Students will get to know the difference between the paintings, frescos, miniature paintings, sculptures and graphics. |
| Rajasthani schools of miniature painting, Its origin and development and paintings. | Same as above. | Same as above |
| Still life | Composition of objects will be kept in the front of the student on video. |  |
|  |  ***July- August***  |   |
| Pahaadi school of miniature painting, sub-schools and paintings of pahaadi schools. | Features of pahaadi and Rajasthani paintings will be discussed in the class and the pictures of the painting will be shown |  |
| Mughal and Deccan school of miniature painting | The features geographical area and different painting of this school will be discussed. |  |
| Landscapes and Textures | Easy methods will be introduced to make different season of landscape. |  |
|  | ***September*** |  |
|  | Revision and completion of portfolio.  |  |
|  | ***October- November*** |  |
| Bengal school will be introduced and the contribution of the Bengal artist in the national freedom struggle, National flag and its significance. | How many times the National flag was designed- will be discussed . | Bengal artist brought swadeshi value to Indian paintings and spread Nationalism across the country |
| Modern and Contemporary art | Different styles of model art will be taught to students. | Students will able to make the comparison with the realistic art and abstract form as well as different medium for creating art facts. |
|  | ***December – January***  |  |
|  | Completion and completion of Portfolio. |  |

 CURRICULUM 2021-22

**SUBJECT: COMPUTER SCIENCE**

**CLASS: XII**

OBJECTIVES:

 1. Prerequisites: Computer Science- Class XI

2. Learning Outcomes: Students should be able to

 A. apply the concept of function and recursion.

B. create and use Python libraries.

 C. explain and use the concept of file handling.

 D. explain the concept of efficiency in algorithms and computing in general.

E. use basic data structure: Stacks and Queues.

 F. explain basics of computer networks.

 G. use Database concepts, SQL along with connectivity between Python and SQL.

MONTH & NO. OF WORKING DAYS: **APRIL - 23 DAYS**

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| **CHAPTER** | **METHODOLOGY** | **LEARNING OUTCOME** |
| **Unit I: Computational Thinking and Programming – 2**• Revision of Python topics covered in Class XI. • Functions: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope. | * Lecture method
* Diagrammatic representation
* Group discussion
* Demonstration of

 activities | The students will be able to…● Apply the concept of function and uses in programming in Python |

MONTH & NO. OF WORKING DAYS : **MAY - 23 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| • Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths • Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause, writing/appending data to a text file using write() and writelines(), reading from a text file using read(), readline() and readlines(), seek and tell methods, manipulation of data in a text file | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…● Know various type of files like text file, binary file, csv file and their use in storing of data in text file through python programing  |

MONTH & NO. OF WORKING DAYS : **JULY - 25 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| •Binary file: basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append and update operations in a binary file • CSV file: import csv module, open / close csv file, write into a csv file using csv.writerow() and read from a csv file using csv.reader( ) • Python libraries: creating python libraries | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…● Know various ways of operating binary files and csv file, through python programing |

MONTH & NO. OF WORKING DAYS : **AUGUST - 22 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| •Recursion: simple programs with recursion: sum of first n natural numbers, factorial, fibonacci series • Idea of efficiency: number of comparisons in Best, Worst and Average case for linear search • Data Structure: Stack, operations on stack (push & pop), implementation of stack using list. Introduction to queue, operations on queue (enqueue, dequeue, is empty, peek, is full), implementation of queue using list. | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…● Learn recursion in python programming●Learn searching method●Learn data structure : operations of stack and queue |

MONTH & NO. OF WORKING DAYS : **SEPTEMBER - 14 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| **Unit III: Database Management**• Database concepts: introduction to database concepts and its need • Relational data model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key) • Structured Query Language: introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null, unique, primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table, insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete command, aggregate functions (max, min, avg, sum, count), group by, having clause, joins: cartesian product on two tables, equi-join and natural join | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…● know relational database of storing and managing data●Know SQL to define and manipulate data through various queries |

MONTH & NO. OF WORKING DAYS: **SEPTEMBER - 14 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| • Interface of python with an SQL database: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…●Know connectivity between Python (Front End) and Mysql(Back End), defining and manipulating data in Mysql through python programming |

MONTH & NO. OF WORKING DAYS : **OCTOBER -21 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| **Unit II: Computer Networks**● Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET) ● Data communication terminologies: concept of communication, components of data communication (sender, receiver, message, comm-unication media, protocols), measuring capacity of comm-unication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching) ● Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves) ● Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card) ● Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree) ● Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP, wireless/mobile communication protocol such as GSM, GPRS and WLL ● Mobile telecommunication technologies: 1G, 2G, 3G, 4G and 5G ● Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…●Know computer net-working, its use and benefit ●Know data communication and various technologies  |

MONTH & NO. OF WORKING DAYS : **NOVEMBER -20 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| ● Preparing of Practical file (containing at least best 20 python programs and at least 10 SQL queries● Preparing of Project report | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…● Prepare practical file●Prepare Project report |

CURRICULUM 2021-22

**SUBJECT: Informatics Practices**

**CLASS: XII**

1. **Prerequisite**: Informatics Practices – Class XI 2.
2. **Learning Outcomes** : At the end of this course, students will be able to:

 ● Create Series, Data frames and apply various operations.

 ● Perform aggregation operations, calculate descriptive statistics.

 ● Visualize data using relevant graphs.

 ● Design SQL queries using aggregate functions.

 ● Import/Export data between SQL database and Pandas.

 ● Learn terminology related to networking and the internet.

 ● Identify internet security issues and configure browser settings.

 ● Explain the impact of technology on society including gender and disability issues.

MONTH & NO. OF WORKING DAYS: **APRIL - 23 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| **Unit 1: Data Handling using Pandas and Data Visualization Data Handling using Pandas -I** Introduction to Python libraries- Pandas, Matplotlib. Data structures in Pandas - Series and data frames. Series: Creation of series from ndarray, dictionary, scalar value; mathematical operations; series attributes, head and tail functions; selection, indexing and slicing.  | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…● Learn Data Structure in Pandas – Series and DataFrame● Learn exporting data from CSV file |

MONTH & NO. OF WORKING DAYS: **MAY - 23 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| Data Frames: creation of data frames from dictionary of series, list of dictionaries, text/CSV files, display, and iteration. Operations on rows and columns: add (insert /append), select, delete (drop column and row), rename, Head and Tail functions, indexing using labels, Boolean indexing; joining, merging and concatenation of data frames. Importing/Exporting Data between CSV files and Data Frames. (for practicals only) | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…● Learn exporting data from CSV file |

MONTH & NO. OF WORKING DAYS: **JULY - 25 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| **Data handling using Pandas – II** Descriptive Statistics: max, min, count, sum, mean, median, mode, quartile, Standard deviation, variance. Data Frame operations: Aggregation, group by, Sorting, Deleting and Renaming Index, Pivoting. Handling missing values – dropping and filling. Importing/Exporting Data between MySQL database and Pandas. | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…●Know various statistics functions●Importing and exporting data data between MYSQL database and pandas |

MONTH & NO. OF WORKING DAYS: **AUGUST - 22 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| **Data Visualization**: Purpose of plotting, drawing and saving of plots using Matplotlib (line plot, bar graph, histogram, pie chart, frequency polygon, box plot and scatter plot). Customizing plots: color, style (dashed, dotted), width; adding label, title, and legend in plots. | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…●Learn analysis of data through various graphs like line plot, bar graph, pie chart etc..  |

MONTH & NO. OF WORKING DAYS: **SEPTEMBER - 14 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| **Unit 2: Database Query using SQL** Math functions: POWER(), ROUND(), MOD(). Text functions: UCASE()/UPPER(), LCASE()/LOWER(), MID() /SUBSTRING() /SUBSTR(), LENGTH(), LEFT(), RIGHT(), INSTR(), LTRIM(), RTRIM(), TRIM(). Date Functions: NOW(), DATE(), MONTH(), MONTHNAME(), YEAR(), DA (), DAYNAME(). Aggregate Functions: MAX(), MIN(), AVG(), SUM(), COUNT(); using COUNT(\*). Querying and manipulating data using Group by, Having, Order by. Operations on Relations - Union, Intersection, Minus, Cartesian Product, JOIN (Cartesian Join, Equi Join, Natural Join) | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…●Learn sql queries with the use of various functions like math functions, string functions, date and time functions●Learn retrieving data from more than one table through joining of tables |

MONTH & NO. OF WORKING DAYS: **OCTOBER -21 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| **Unit 3: Introduction to Computer** Networks Introduction to networks, Types of network: LAN, MAN, WAN. Network Devices: modem, hub, switch, repeater, router, gateway Network Topologies: Star, Bus, Tree, Mesh. 7 Introduction to Internet, URL, WWW and its applications- Web, email, Chat, VoIP. Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website. Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies. | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…●Know about computer network, type of network, network devices, network topologies●Know about web activities  |

MONTH & NO. OF WORKING DAYS: **NOVEMBER - 20 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| **Unit 4: Societal Impacts** Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act. E-waste: hazards and management. Awareness about health concerns related to the usage of technology | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…●aware about various online activities, their management and their impact on our society  |

MONTH & NO. OF WORKING DAYS: **DECEMBER - 15 DAYS**

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| **CHAPTER** |  **METHODOLOGY** | **LEARNING OUTCOME** |
| ● Preparing of Practical file (containing at least best 20 python programs and at least 10 SQL queries● Preparing of Project report | ● Lecture method● Practical method● Pictorial demonstration ● Discussion Method | The students will be able to…● Prepare practical file●Prepare Project report |