ANNUAL CURRICULUMPLAN
CLASS: XII-SCIENCE

SESSION 2024-25

ASSESSMENTSTRUCTUREFORTHEACADEMICSESSION2024-25(CLASS-XII-SCIENCE)

SCHOLASTICAREA:

ENGLISH

Month	Lesson& Topics	No.of Periods	Learning Objectives	Methodology/Activities	TeachingAids/Resources	ExperientialLearning	AssessmentTools	LearningOutcomes
April	Thelastlesson	3	Learning how patriotismalso meansloveforone's language and other aspects of culture.	Reading/explanation .Groupdiscussion	chart/dictionary/NCERT textbook	Will enhance the communicationskill	presentationofcharacters from story studied, pen paper test /mcq/oral test	Students will be able understand the Importance of Educationinone'slife
	Thethirdlevel	3	Tounderstandthe complexities of modernworld	lecture method/Group Discussion	NCERTtextbook	Willenhancethecritical thinking ofthestudents	penpapertest/mcq/oral test	studentswillbeableto overcomeadverse circumstancesin life
	Mymotherat66	2	Torecognizethe placeofmother	Reading/explanation method.Roleplay	NCERTtextbook	Will enhance the communicationskill	penpapertest/mcq/oral test	Toacceptherealityof lifeand alsothat death is inevitable
June	Lostspring	3	Tounderstandthe importanceof childhood	Lecture method/Group Discussion	NCERTtextbook	Willenhancethecritical thinking ofthestudents	penpapertest/mcq/oral test	To understand the plightofslumchildren
	Thetigerking	3	Encouragesreaders with the ability to fightandovercome toughsituationsand overwhelmingterror	Lecture method/smart boardQuiz	NCERTtextbook	Will enhance the communicativeskilland criticalthinking	penpapertest/mcq/oral test	steps to be taken to preservetigersasthey arebecoming extinct
	An elementary schoolinaslum	3	Sensitization towardsthecritical issueofchildlabor and deprivation of the basic right to education inslum area.	Reading/explanation method. Group Discussion	NCERTtextbook	Willenhancethecritical thinking ofthestudents	penpapertest/mcq/oral test	To understand the patheticconditionof slumchildren
	Writing Skills Notice/Advertisement	2	Learnnewformsof advertising techniques	Format explanation/smartboard.Wattest	chart/formats based on topics/NCERTtextbooks	willenhancethecreative thinking	penpapertest/mcq/oral test	studentsvocabulary will be enhanced.
July	Deepwater	2	Howtoovercome any kind of fear	Reading,Explanatory method/Quiz	chart/formats based on topics/NCERTtextbooks	Willhelpthestudentsin buildingconfidence	penpapertest	To analyze own strengthandweakness
	Journey to the endoftheearth	3	Tounderstandthe damagecausedby humanimpact on earth	Lecture method/Group Discussion	NCERTtextbook	Willhelpthestudentsto understandtheaffect of globalwarming	Penpapertest/Mcq's	The students will be understandingthetrue condition of mother earth
	KeepingQuiet	2	Tounderstandthe concept of introspection	lecture method/Group Discussion	NCERTtextbook	Will help the students to understandthemselvesin a better way	Pen paper test,oralquestions,Mcq's	willhelpthestudents to understand the purpose of living in this World

	WritingSkills Poster/formal invitationand reply	2	Will enable the learnerstoexpress their ideas cohesively	Drawingpostersfor various reasons	Chartpaper	Will helpthestudents in showcasingtheircreative aspects	Drawingcompletion	Studentswillbeableto potray their thoughts through creative medium
	TheRattrap	3	Tounderstandthe lifeofavagabond	Explanatory method/Group Discussion	NCERTtextbook	studentswillunderstand the value of god's blessings in their life	Pen paper test,oralquestions,Mcq's	Studentswillbeableto understandtheconcept of kindness, and humanity
	TheEnemy	3	Tounderstandthe valueofpatriotism and duty in one's life	Task based learning/Quiz	NCERTtextbook	students will learn to perform their duty towardstheircountryas wellsocietywithutmost sincerity	oral test/Mcq's	Totakefirmdecisions even in adverse circumstances
AUGUST	Athingof beauty	2	To understand our surroundings with referencetoNature	Reading/explanation . /quiz	NCERTtextbook	Studentswillbeableto understand the environmentinabetter way	oral test/Mcq's	studentswillbeableto appreciatethefreegifts given to human beings intheformofnature bygod
	Business or officialletter	2	To enhance the vocabularyofthe students	Format explanation/Wattest	NCERTtextbook	students will be able to expresstheirthoughtsin more creative way	Penpapertest/Mcq's	studentswillbeableto enhance their writing skills
	Indigo	3	To understandthe sacrificesdoneby ourcountrymen to attainthefreedom for our country	lecturemethod/Quiz	NCERTtextbook	Students will be able to understand the struggle done by the freedom fighterstoattain freedom	Penpapertest,oralquestions, Mcq's	Studentswillbeableto acknowledge the sacrifices done by our countrymentoattain freedom
	ShouldWizard hit Mommy	3	To enable the the studentstorespect generationgap.	Reading/Explanation /Role play	NCERTtextbook	To understand the differencebetweenthe outlook of a child in comparisontoamature individual	Pen paper test,oralquestions,Mcq's	Tounderstandthatthe decisionstakenbythe grown up person are basedontheirreallife experiences
	Aroadside stand	2	To understand the plight of people who are not economicallysound	Reading,Explanatio n/Quiz	NCERTtextbook	Students will be able to understandtheplightof underprivilegedpeople	Pen paper test,oralquestions,Mcq's	Studentswillbeableto understand the condition faced bythe people who earn their livingondailybasis
SEPTEMBE R	Writingskill letter to the editor/job application	2	Willenhancethe creativeSkill	Format explanation/Wattest	NCERTtextbook	students will be able to expresstheirthoughtsin more creative way	Halfyearly examination	studentsvocabulary will get enhanced
OCTOBER	Poetsand Pancakes	3	studentswilllearn theartoftime management	Lecturemethod/Skit	NCERTtextbook	Studentswillbeableto valuetimeandnotwaste it unnecessarily	penpaper,oraltest,Mcq's	Studentswillutilize theirtimeinfruitful manner
	Onthefaceofit	3	to enable the learners to view others by removing the glasses of prejudice,hatredand dislike.	Reading,explanation /GroupDiscussion	NCERTtextbook	Students will learn to treathandicappedpeople equally	PenPapertest,oral-questions,Mcq's	studentswilllearnto be kind towards disabled

	AuntJennifer Tiger	2	the learners will knowaboutthe constrainsamarried womanfaces inher life	Explanatory method/Group Discussion	NCERTtextbook	Willenhancethecritical thinking ofthestudents	Penpapertest,oralquestions, Mcq's	studentswillbeableto analyze the condition of women in society
November	ArticleWriting	2	to enable the learners to express theirideasfluently, chronologicallyand concisely	Format explanation/group discussion	NCERTtextbook	Their creative writing would be analysed.The interpreting and evaluativeskillswouldbe strengthened	classtest	The Students would develop an interest towardswriting.Their planning and organizingtechniques would be enhanced
	Debate	2	to enable the learners to express theirideasfluently, chronologicallyand concisely	Theformat,rules,tech niquewould be discussed/group activity	NCERTtextbook	will enhance the communicationskill	Debate to be conducted in theclassroomonthegiven topic.	Publicspeakingskill will be developed.
	TheInterview I& II	3	the learners will learn to manage timeinabetterway	peer to peer teaching/group discussion	NCERTtextbook	Studentswilllearnto managetimetopursue their creative work	Penpapertest,oralquestions, Mcq's	General public will understand that celebrities also need timeandspacetolive their life.
	Evan'stries "O"level	4	To enable the leaners,identifythe complexitieswhich comeswithteenage	Lecture method/group discussion	NCERTtextbook	learn to appreciate the ingenuity and the mechanismofasharpand intelligent mind	Penpapertest,oralquestions, Mcq's	The learners will be able to familiarize themselves with specificbackgroundof thecatandmouserole ofthepoliceandthe criminal.
December	Speech	2	to enable the learners toexpress theirideasfluently, chronologicallyand concisely	Format explanation/group discussion	NCERTtextbook	willenhancethecreative skill	classtest	WritingSkillofthe learners will get enhanced
	Report Writing	2	to enable the learners toexpress theirideasfluently, chronologicallyand concisely	Format explanation/group discussion	NCERTtextbook	willenhancethecreative skill	classtest	criticalandcreativethinkin gskillofthe students will be enhanced.
	GoingPlaces	3	studentswillbeable to understand their responsibilityand devotetheir attentiontowards their duties	Explanatory method/debate	NCERTtextbook	will enhance the communicationskill	Pen-papertest,oralquestions,Mcq's	Students will learn the differencebetweenreal and imaginary world
	Memoriesof Childhood	3	studentswillbeable to understand the problems relatedto Casteismandracial discrimination	Reading,Explanatory method/peer to peer teaching	NCERTtextbook	willenhancethecritical thinking	Pen-papertest,oralquestions,Mcq's	Thelearnerswouldbe able to sensitize themselves to the issues of estranged culturalties.

	RevisionforAnnualExam

MATHEMATICS

Month	Lesson&Topics	No.ofPeriods	LearningObjectives	Methodology/ Activities	TeachingAids/ Resources	Experiential Learning	Assessment tools	LearningOutcomes
APRIL	1. Relationand Functions [Equivalence Relation TypesofFunction] 2. Inverse Trigonometric Functions 3. Matrices 4.Determinants& One Activity(I-Equivalence-Relation)	8+7+6+8+2=31	(a)Introduction (b)Learning about basic concept of sets , Relation and Function (a)Introduction (b)Learning aboutbasicconceptofMatrices &determinant(c)Toincreasethe level of understanding about RelationandFunctions,Inverse Trigonometric functions, MatricesandDeterminantsand its application	Explanation, Questioner,Problem solving, Induction and Deduction Method. And demonstration	Smart Board,Chart, model Modules, Internet, Lesson Plan.TextBook, Ref. books and Competitive ExamsBooksand Lab manual etc.	Different Practical Examples connectingin ourdailylife.	Pen-paperTest, Oral Test,Class Test,Labwork, Quiz, and Model Presentationetc.	Studentswillbeable to solve allrelated problems(general&p ractical)from different sources. They will be also developedhigherorder thinking skills.
JUNE	5.Continuityand Differentiability	4+11=15	(a)Introduction (b)Learning about basic concept of Continuityand Differentiability (c)To increase the level of understanding about Continuity and Differentiability and its application	Explanation, Questioner,problem solving method, Induction and deductionMethod.	Smart Board, Chart, model Teach Next Modules CD, Internet, Lesson Plan.TextBook. books , Competitionbooks	Examples of different Practical Examples jessingindaily life.	Pen-papertest, Oraltest,Class test,Labwork, Quiz,Model Presentation	Studentswillbeable tosolvetheproblem-based questions and develop higher thinkingorderskills.
JULY	6.Applicationof Derivatives&Tw o Activities(I-Inverse Trigonometric Functions II-Application of Derivatives)	16+ 4=20	(a)Introduction(b)Learning about ApplicationofDerivatives To increase the level of understandingaboutApplication ofderivativeanditsdifferentuse in our daily life.	Explanation, Questioner,problem solving method,Inductionand deductionMethod.	SmartBoard,Chart, modelTeachNext Modules CD, Internet, Lesson Plan.Text Book,ref.books, Competition booksPen-paper test,Oraltest,Class test, Lab work, Quiz,Model Presentation	Examples of different Practical Examples jessingindaily life.	Pen-papertest, Oraltest,Class test,Labwork, Quiz, Model Presentation	Studentswillbeable tosolvetheproblem basedquestionsand develop higher thinkingorderskills.
AUGUST	7.Integrals 8.Applicationof Integrals	16+ 4=20	(a)Introduction (b)Learning aboutbasicconceptofIntegrals and Application of Integrals (c)To increase the level of understanding about Integrals anditsapplicationandpractical use in our daily life.	Explanation, Questioner,problem solving method,Inductionand deductionMethod.	SmartBoard,Chart, modelTeachNext Modules CD, Internet, Lesson Plan. Text Book, Ref. books, Competitionbooks	Examples of different Practical Examples jessingindaily life.	Pen-papertest, Oraltest,Class test,Labwork, Quiz,Model Presentation	Studentswillbeable tosolvetheproblem basedquestionsand develop higher thinkingorderskills.
SEPTEMBER	**RevisionOnly**							
OCTOBER	9.Differential Equations 10.Vectors & OneActivity [Vectors]	8+5+2=15	(a)BasicConcept ofDifferential Equations & Vectors (b)Application of differential Equations and Vectors	Explanation, Questioner, problemsolving method,Inductionand deductionMethod.	Smart Board, Chart,modelTeach NextModulesCD, Internet,Examples LessonPlan. Text	Examplesof different Practical Examples existingin	Pen-papertest, Oraltest,class test,Labwork, Quiz,Model Presentation	Studentswillbeable tosolvetheproblem-based questions and develop higher thinkingorderskills.

					Book,ref.books, Competitionbooks	dailylife.		
NOVEMBER	11.Three-Dimensional Geometry 12. LinearProgramming	10+5=15	(a Introduction(b)Learning about basic concept of 3D Geometry & Linear ProgrammingAnditsapplication in Daily life.	Explanation, Questioner,problem solving method, Induction and deductionMethod.	Smart Board, Chart, model Teach Next Modules CD, Internet, Lesson Plan. Text Book, Ref. books, Competitionbooks	Examplesof different Practical Examples existing in dailylife.	Pen-papertest, Oraltest,Class test,Labwork, Quiz,Model	Studentswillbeable tosolvetheproblem based questions and develop higher thinkingorderskills.
DECEMBER	13.Probability& One Activity [I-Three Dimensional geometry]Revision forPre-Board-2022	8+2+2=12	(a)Introduction (b)Learning about basic concept of Probabilityanditsapplicationin our practical life.	Explanation, Questioner, problem solving method,Inductionand deductionMethod.	Smart Board, Chart, model Teach Next Modules CD, Internet, Lesson Plan.TextBook, Ref. books , Competitionbooks	Examplesof different Practical Examples existing in dailylife.	Pen-papertest, Oraltest,Class test,Labwork, Quiz,Model Presentation	Studentswillbeable tosolvetheproblem-based questions and develop higher thinkingorderskills.

BIOLOGYCURRICULUM

S.No	UNIT	NAMEOFUNIT	NO.OFPERIODS	MONTH	WORKINGDAYS
1.	I	**Reproduction**	30	March-April	14
2	II	**GeneticsandEvolution**	40	April-June	22+14=46
3	III	**Biologyinhumanwelfare**	30	July	27
4	IV	**Biotechnology**	30	August	22
5	V	**Ecologyand Environment**	30	October-November	20+10=30
			160		**139**
No.ofworkingdaysiscountedwiththeinstructionstocompletethesyllabusby November15th.					

Month	Topics&Sub-Topics	NoofPeriods	LearningObjective	Methodology	Teachingtools/Resources	ExperientialLearning	AssessmentTools	Learningoutcome
April	**01. Reproductioninorganism**Reproduction,characteristicfeature of all organisms forcontinuation of species;modes of reproduction -asexual and sexualreproduction; asexualreproduction-binaryfission,sporulation, budding,gemmuleformation, fragmentation;vegetativepropagation in plants.	**6**	**Itwouldenablestudentto understand:** • Learning about theintegrateddefinition ofreproduction,Itstypes ,variousmodes. • Types of asexualreproduction theirexample-basedlearningand comparison	• Lecture • Interaction • demonstration ofmodels, • groupassignmentbrainstorming • discussion • case-study • fieldexercise • projects • seminars	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook	**Studentswould:** Able to makenutritive media forgerminationbyusingboricacidandobserve it undermicroscope. Identifyvarioustypes ofasexualmodes ofreproductiontakesplace.	• Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records.	**Studentwouldbeableto:**A cquiretheconceptofinternal & externalfertilization. Conceptofseedandfruitformation will bedeveloped. Would acquire theconcept of variousvegetativepropagationand their types.
	02. SexualReproductioninFloweringPlant Flower structure;developmentof maleand	**12**	**Itwouldenablestudentto understand:** • PollenPistilinteraction	**Activity:**	**FortheActivity** PenPaper	**Studentswould:**Demonstrateth eproperties ofvarious	• Observations • Testing& Records	**Student would be able to:**Acquiretheknowledgetoidentify various flowerspollinated by variousagencies.

	femalegametophytes;pollination - types, agenciesand examples; outbreedingdevices;pollen-pistilinteraction; doublefertilization; post fertilizationevents - development ofendosperm and embryo,development of seed andformation of fruit; specialmodes-apomixis,parthenocarpy,polyembryony;Significanceof seed dispersal and fruitformation. **PRACTICALS:** 1. Study of pollengerminationon slide. 2. Adaptationsofflowersto wind pollination and insectpollination. 3. Pollengerminationons tigma 4. Mitosisinonionroottip.	**08**	• Pollination-typesagenciesandexample, • outbreedingdevices • doublefertilization • Postfertilizationevents-developmentof • endospermandembryospecialmodesof reproduction – apomixes,parthenocarpy,polyembryony.	Maketwogroupsintheclassdefendingsexual and asexualreproductionrespectively. Makeacomparativestudyofboth.		flowerspollinatedbydifferentagenciessuchaswind,water,insect etc. Concept ofendospermformationanditsimportance.	• Practical approach • Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records	Conceptualizetheneedandobservepollentubeformation. Identifyparthenocarpic,polyembryonic plant.Recognizemale&femalereproductive part ofplants.
June	**03.HumanReproduction**Male and femalereproductivesystems; microscopic anatomy oftestis and ovary;gametogenesis - spermatogenesisandoogenesis; menstrual cycle;fertilisation, embryodevelopmentuptoblastocystformation,implantation;pregnancy and placentaformation(elementaryidea);parturition(elementaryidea); lactation (elementaryidea).	10	**Itwouldenablestudenttounderstand:** • Study of Male andfemalereproductivesystemsandthenroleof each part. • Microscopicanatomy of testis and ovary. • Concept ofgametogenesis-spermatogenesis &ogenesis. • Menstrualcycleandvariouseventsofit. • Fertilsation-blastocystformation,implantation, pregnancy andplacentaformation. • Conceptofparturition,lactationandhormonalchangesinthebody.	• Lecture • Interaction • demonstration ofmodels, • groupassignmentbrainstorming • discussion • case-study • fieldexercise • projects • seminars **Activity:** Observetheslideofhumanovary,blastula undermicroscope.	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook	**Studentswould:**Identifythevariousparts of testis andovarywiththehelpof various slides.Gettheconceptofblastulaformationwith the help ofvariousslides. Aware of variousmethods which aredevelopedtocombatinfertility.	• Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records	**Studentwouldbeableto:** ▪ Understandtheconceptofspermatogenesisandoogenesis and varioushormonalchangesoccuringduringit. ▪ Knowthevariousstagesofimplantationanditsaffectonuterus. ▪ Understandtheroleofplacentaandplacentalhormonesduringpregnancy. ▪ identifythevariousparts oftestis and ovary with thehelp of various slides.

	04.ReproductiveHealth Need forreproductivehealthand prevention of SexuallyTransmittedDiseases (STDs);birth control - need andmethods,contraceptiona ndmedical termination ofpregnancy(MTP);amniocen tesis; infertility andassistedreproductivetech nologies- IVF,ZIFT,GIFT(elementaryide aforgeneralawareness). **PRACTICALS:** 5. Identificationofstages inMeiosis in onion buds 6. Observation of Ts ofmammalianOvaryandTSof testis , TS of blastulamicroscopicslides 7. emasculationandbagging(c ontrolled pollination)8.Mendelianinhe ritance,Pedigree Charts 9.Salivaryamylase experiments.	04 10	**Itwouldenablestudentto understand:** • Needforreproductiveh ealthandpreventionof STDs. Concept ofbirth control needsandmethods. • Concept ofcontraceptionand MTPs,Amniocentesis. • Methods to cureinfertilityandassis tedreproductivetechn ologies- IVF,ZIFT,GIFT,IUDs.	**Activity**:Discussion onMTPand STD andmaking a chart of differentSTD'stheirm eansandpathogens.	**FortheActivity** PenP aper Casestudy	**Studentswould:** • Know the use ofcontraception'san dtheireffectonbody. • Understandtheproje cts on variousARTtechniqu esusedintoday'sgene rationwhere there are somanycomplication sregardingpregnanc yUnderstandartificia lmodeoffertilization	• Observations • Testing& Records • Practical approach • Checklist&Ra tingscale • Quizinclass • Inclass activity • Homework records	**Studentwouldbeableto:** ▪ Understandtheconceptofbl astulaformationwiththehel p of various slides. ▪ Understandsexuallytran smitteddiseases andits preventivemeasures.

July	**05. PrincipalofInheritanceandVariation** Heredity and variation:Mendelianinheritance;deviationsfromMendelism-incomplete dominance, co-dominance, multiple allelesand inheritance of bloodgroups,pleiotropy;elementaryideaofpolygenicinheritance;chromosometheory of inheritance;chromosomesandgenes;Sexdetermination - in humans,birdsandhoneybee;linkageandcrossingover;sexlinkedinheritance - haemophilia,colour blindness; Mendeliandisorders in humans - thalassemia;chromosomaldisordersinhumans;Down'ssyndrome, Turner's andKlinefelter's syndromes. **06.MolecularBasisofInheritance** Search for genetic materialandDNAasgeneticmaterial;Structure of DNA and RNA;DNA packaging; DNAreplication; Central dogma;transcription, genetic code,translation;geneexpression	**10** **15**	**Itwouldenablestudentto:** • Conceptbuildingof mendelian • Inheritance,DeviationsfromMendelism, • Incompletedominance, Co-Dominance,multiple alleles. • Concept buildingaboutvariousbloodgroups and theirinheritance. • Conceptofpleiotropyandpolygenicinheritance. • Chromosomaltheory ofinheritance. • Sexdeterminationin-Humans, Birds andhoneybeesConceptoflinkage and crossingover. • Sex linkedinheritance-Haemophila,colour Blindness. • Chromosomaland Mendelian • DisordersinHumans. • Familydiseasescanbestudied with the helpof pedigree analysischart. **Itwouldenablestudenttounderstand:** • Search(s)forgenetic&structure of DNA andRNA • DNAreplicationand packaging. • Central Dogma.	• Lecture • Interaction • demonstration ofmodels, • groupassignmentbrainstorming • discussion • case-study • fieldexercise • projects • seminars **Activity:** Make a list of sexlinkeddiseasesand chromosomaldisorders. • Lecture • Interaction • demonstration ofmodels, • groupassignmentbrainstorming	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook **FortheActivity** PenPaper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects	**Studentswould:**Conceptualize Mendelianlawsofinheritanceindifferenttraits. Beabletofindoutdiseasesassociatedwithchromosomeorgenes. Beabletofindoutdiseaseswithpedigreeanalysischarts. Abletoconceptualizerole of mutation andits affect can bestudied. **Studentswould:** Abletoconceptualizeroleofmutationanditsaffect can bestudied Abletoprepareachart on salientfeaturesof DNA.	• Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records • Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass	**Studentwouldbeableto:** ▪ Conceptualizebuildingon mendeliangenetics ▪ Understandvariousattributesofmendelianand chromosomaldisorders. ▪ Conceptualize bloodgroupsandtheirroleinvarious organisms. ▪ Understand the role ofmutationanditsaffectcan bestudied. ▪ Conceptualizethatfamilydiseases can be studiedwiththehelpofpedigreeanalysischart **Studentwouldbeableto:** • Toprepareasequence ofDNAfingerprintingandittechniquesUnderstandthe concept of DNA and itsstructure is developed. • ConceptualizeDNA packaging and itsapplications. • ConceptualizeGeneticcode

	andregulation-lacoperon;genomeandhumanandricegenome projects; DNAfingerprinting **07.Evolution** Origin of life; biologicalevolutionandevidencesforbiological evolution(paleontology,comparativeanatomy, embryology andmolecularevidences);Darwin'scontribution,modernsynthetictheoryofevolution; mechanism ofevolution - variation(mutation andrecombination)andnaturalselection with examples,types of natural selection;Geneflowandgeneticdrift;Hardy-Weinberg'sprinciple;adaptive radiation; humanevolution. **Practicals:** 10. Observation of disease-causingorganisms/symptoms 11. DNAisolation 12. Soilexperiments	**07** **05**	• Transcription • Geneticcode • Translation • Gene expression andregulation-lacoperon. • GenomeandHumanand rice genomeprojects • DNAfingerprinting. **Itwouldenablestudentto understand:** • Conceptoforiginoflife • Biologicalevolution and its evidences. • Darwin'scontributionwithrespectofmodernsynthetic theory ofevolution. • Concept of naturalselectionandits types. • Geneflowandgeneticdrift. • Hardy Weinberg'sprincipleitsapplication. • Adaptiveradiationandhumanevolution.	• discussion • case-study • fieldexercise • projects • seminars **Activity:**Discussiononthestructure andfunction of DNA. • Lecture • Interaction • demonstration ofmodels, • groupassignmentbrainstorming • discussion • case-study • fieldexercise • projectsseminars **Activity:** Make a list ondifferenttype ofmutationand mutagens.	➢ flash cards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook**For the Activity**Pen Paper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook **FortheActivity** PenPaper	Able to prepare achart on variouscontrasting featureon eukaryotic andprokaryotictranscriptionandtranslation. **Studentswould:**Able tosummariesvariousstheoriesof evolution on a chart.Observe thedifferencesbetweenhomologousandanalogousorgans.Demonstrate thedifferencesbetweenMendelian &Darwinian theoriesofevolution.	• Inclass activity • Homework records • Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records	anditsrelationwithproteinsynthesis. **Studentwouldbeableto** ▪ Conceptbuildingonvarious theories ofevolution ▪ Gain Knowledge aboutevolution,itspatternsandevidences of evolution ▪ UnderstandstrategiesofhardyWeinbergprincipalDeviations from HardyWeinbergprinciple. ▪ Knowledgeofevolutionofplants and animals.
Aug	**11.Biotechnology:PrincipalandProcesses** GeneticEngineering(RecombinantDNATechnology).	**11**	**Itwouldenablestudentto understand:** • The concept ofbiotechnologyanditsapplications.	• Lecture • Interaction • demonstration ofmodels, • group	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts	**Studentswould:** Beableto–Knowtheconcept ofbiotechnologyanditsapplications.	• Observations • Testing& Records • Practical approach	**Studentwouldbeableto:** • KnowtheconceptofGeneticEngineering. • Howthiscanbeusedindifferentmethodologies

	Upstream processingDownstreamProcessing **12.BiotechnologyandItsApplication** Applicationofbiotechnologyin health and agriculture:Human insulin and vaccineproduction, stem celltechnology, gene therapy;geneticallymodified organisms - Bt crops;transgenicanimals;biosafetyissues, bio piracy andpatents.	**08**	• Principlesand processes. • Methodofgenetice ngineering • FormationofrDNA. **Itwouldenablestudenttounderstand:** • Conceptofhumani nsulinandvaccinep roduction. • Stemcelltechnology • Gene Therapy • Geneticallymodified organisms-Btcrops, • Transgenicanimals • Biosafetyissues • Biopiracyandpatents.	assignmentbrain storming • discussion • case-study • fieldexercise • projectss eminars **Activity:** Makealistofv ectors. • Lecture • Interaction • demonstration ofmodels, • groupassign mentbrainsto rming • discussion • case-study • fieldexercise • projectss eminars **Activity:** Using dry yeastmakealcoholb ytheprocess offermentation.	➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&re ferences ➢ NCERTTextbook **FortheActivity** PenP aper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&re ferences ➢ NCERTTextbook **FortheActivity** PenP aper	Understandhowthiscan be used indifferentmethodologiesPrepareaprojectonrecombinantDNA technology **Studentswould:**Prepareaprojectonartificialinsulinproduction byEliliytechnology. Tomakeachartonvariousgmosbothplantsandanimals.	• Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records • Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records	• Formationandimplications ofrDNA. **Studentwouldbeableto:** • Understandtheconceptofgene therapy and itsapplications in variousdiseases. • Conceptualize use ofvariousGMOsandtheirbenefit of organisms.
Sept	**REVISIONFORFIRSTTERM**							

Oct	**08.HumanHealthandDisease** **Strategiesfor** Pathogens;parasites causinghuman diseases (malaria,dengue,chickenguinia,filariasis,ascariasis,typhoid, pneumonia, common cold,amoebiasis, ring worm) andtheircontrol;Basicconceptsof immunology - vaccines;cancer, HIV and AIDS;Adolescence - drug andalcohol abuse.	**07**	**Itwouldenablestudenttounderstand:** • Conceptofdiseasesand their causativeagents. • Commoncommunicablediseasestheircausessymptoms andcure. • Basic concepts ofimmunologyvaccines. • ConceptofHIVandAIDS. • Adolescence–drugandalcoholabuse.	• Lecture • Interaction • demonstration ofmodels, • groupassignmentbrainstorming • discussion • case-study • fieldexercise • projectssminars	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook **FortheActivity** PenPaper	**Studentswould:**Identify&makeachart on variousdiseases. Make a ppt onvariousawarenessprogram on malariaConceptualizeanddescribetheprocessof allergy and itssolution. Makeaprojecton HIV and cancer.	• Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records	**Studentwouldbeableto:** • Develop knowledgeofhowdiseases are spread. • Get concept of personalhygieneanditsimportancewill be developed. • Understanddrugsand misuse will beadministered
	09.EnhancementinFoodProduction Improvement in foodproduction:Plantbreeding,tissue culture, single cellprotein,Biofortification,Apiculture and Animalhusbandry.	**07**	**Itwouldenablestudenttounderstand :** • Concept of Plantbreedingtechniques. • Tissueculturepro cessandimportance. • Singlecellprotein,itsuse and affect. • Biofortification&itsadvantages • Apicultureand animalhusbandry	**Activity:** Makealistof microbesaspathogens. • Lecture • Interaction • demonstration ofmodels, • groupassignmentbrainstorming • discussion • case-study • fieldexercise • projectssminars	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook	**Studentswould:**Able to prepare aproject on tissueculturean ditsvariousattributes .identifyvariousexoticandindigenous speciesof animals	• Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records	**Studentwouldbeableto:** • Knowdifferentstrategiesof food production . • Strategiesforfood productionandHybridization • Importanceofanimalhusbandry.
	10.MicrobesinHuman Welfare In household foodprocessing,industrialproduction,sewagetreatment,energygenerationandmicrobesasbiocontrol agents andbiofertilizers.Antibiotics;	**07**	**Itwouldenablestudenttounderstand** • Importanceofmicrobesineverydaylife. • Importanceinagriculturalproduction. • Sewagetreatmentandenergygeneration.	**Activity:** Visitnearbyshelterfarm andobservethewayofanimalshusbandry. • Lecture • Interaction • demonstration ofmodels,	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards	**Studentswould:** Able to make aproject on varioususefulmicrobes.Understandmanagementtechniquesforsolid,water and waste .Detectandworkonover use of	• Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • Inclass	**Studentwouldbeableto:** • Know the importance ofmicrobesindaytodaylife. • Knowroleofantibiotics,itsuse and its manufacture. • Knowroleofmicrobesandbiocontrolagents.

	productionandjudicioususe. **PRACTICALS:** 13. suspendedparticulate matter in the air expt 14. WaterpH,texture, solubilityexperiments	**05**	• Role of microbes asbiocontrolagentsand dbiofertilizers. • Productionofanti bioticsanditsjudic ioususe.	• groupassign mentbrainsto rming • discussion • case-study • fieldexercise **Activity:** Visitnearbymunici palitysothatthey could seesecondarywate rtreatment.	➢ slides ➢ chalk-board ➢ books&re ferences ➢ NCERTTextbook	fertilizersandpromo te use of biofertilizers&bioco ntrolmethods.	activity • Homework records	
Nov	**13. OrganismsandPopulatio ns:**Organismsandenvironme nt: Habitat andniche, population andecologicaladaptations;p opulation interactions - mutualism,competition,pre dation, parasitism;population attributes - growth,birthrateanddeathra te, age distribution.	**08**	**Itwouldenablestudentto understand:** • Conceptofhabitata nd niche. • Populationsandec ologicaladaptation s(types) • Populationin teractions-Mutualism,c ompetitions,p redation,par asitism. • Populationattrib utes-growth,birthrate, death rate, agedistribution.	• Lecture • Interaction • demonstration ofmodels, • groupassign mentbrainsto rming • discussion • case-study • fieldexercise **Activity:** MakeapiechartonBirt hrateanddeathrate on Indianpopulation.	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&re ferences ➢ NCERTTextbook	**Studentswould:**Abl e to prepare aprojectonvarious populationinteract ionsCalculatethep opulationdensityu singquadrantmeth od.	• Observations • Testing& Records • Practical approach • Checklist&Ra tingscale • Quizinclass • Inclass activity • Homework records	**Studentwouldbeableto:** • Relatethevariouskindsofp opulation interactions • Knowpopulationcharacteristi cs and estimation. • Broadenedtheconceptofh abitat a niche.
	14. Ecosystem Organismsandenvironment: Habitatand niche,population and ecologicaladaptations;popul ationinteractions - mutualism,competition, predation,parasitism;populat ionattributes-growth,birthrateand death rate, agedistribution.	**08**	**Itwouldenablestudentto understand:** • Conceptofecosyste m-Patterns&componen ts. • Productivityand decomposition • Conceptofenergyf low. • Ecologicalpyramids-no., energy andbiomass. • Typesofnutrient	• Lecture • Interaction • demonstration ofmodels, • groupassign mentbrainsto rming • discussion • case-study • fieldexercise **Activity:**	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books	**Studentswould:**Able to prepare amodelon energytransmissiont hroughvariousecosys tems.Diagrammaticall yexplain variouspyramids.	• Observations • Testing& Records • Practical approach • Checklist&Ra tingscale • Quizinclass • Inclass activity • Homework records	**Studentwouldbeableto:** • Understandtheconceptof primary andsecondaryproductivity willbe developed. • Understandecologicalsuc cessionanditsapplication. • Understand nutrientcyclingandits impactonenvironmen t. • Understand Energy flow andits estimation via 10%law.

	15. Biodiversity andConservation Concept ofbiodiversity;pattern sofbiodiversity; importanceofbiodiversity;loss of biodiversity;biodiversitycon servation;hotspots,endangeredorganisms, extinction, RedData Book, biosphere reserves, national parks,sanctuaries and Ramsarsites. **PRACTICALS**: 15.Adaptationsofplantstoxeric andaquaticconditions. 16. PopulationdensityandPopulationfrequencyexpts	**08** **05**	cycling– carbonandphosphorus. • Ecologicalsuccession-Hydrarchandxerarch. • Ecologicalservices-carbonfixation,pollination, seeddispersal. **Itwouldenablestudenttounderstand:** • Conceptofbiodiversity • Importanceofbiodiversity • Loss of biodiversity;reasonsandsolutions. • Conservationof biodiversity. • Biodiversityhotspots. • Conceptofendangered,extinctand vulnerableorganisms • Reddatabook • Ex-situ and in -situconservation	MakeapiechartonBirthrateanddeathrate on Indianpopulation. • Lecture • Interaction • demonstration ofmodels, • groupassignmentbrainstorming • discussion • case-study • fieldexercise **Activity:** Make a list ofendangeredspeciesinMadhyaPradesh.	&references ➢ NCERTTextbook ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook	**Studentswould:** Able to calculatefrequencyanddensityofbiodiversityn earby.Make a project onvarious ex situ and insitu conservationstrategies. Conceptualizebiodiversityitspattern,andloss.	• Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • Inclass activity • Homework records	**Studentwouldbeableto:** • Differentiatebetweenvarious conservationstrategies. • Enhancethe knowledge ofred data book. • Identifyhotspotsof biodiversity.
Dec	16. **Environmental Issues:**Airpollution and its control;water pollution and its control;agrochemicals andtheir effects;solid waste management;radioactivewaste management;greenhouseeffect andclimatechange;ozone layer depletion;deforestation; any one casestudy as success storyaddressingenvironmentalissue(s).	**08**	**Itwouldenablestudenttounderstand**: • Pollutionanditstypes. • Methodsandcontrolofpollution. • Agrochemicalsand theireffects. • Solidwastemanagement. • Radioactivewaste management. • Greenhouseeffectand climatechange • Ozonelayerdepletion	• Lecture • Interaction • demonstration ofmodels, • groupassignmentbrainstorming • discussion • case-study • fieldexercise **Activity:** Makealistof10environmental	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT, mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flash cards ➢ slides ➢ chalk-board ➢ books&references	**Studentswould:** Abletoworkonwatermanagementsystem.Understanddifferentenvironmentalissuesand could stop it withsmallprojects. Able to check thepollutionindifferentpolluted and non-polluted areas	• Observations • Testing& Records • Practical approach • Checklist&Ratingscale • Quizinclass • InclassactivityHomeworkrecords	**Studentwouldbeableto:** • Knowthevariouskindsofwastes and their modesofdisposal. • Understandgreenhouse effect andits impact. • Understandthemanagement ofradioactivewastes.

			• Reasonsofdefores tationandsolution . • Case study assuccessstoryaddressi ngenvironmentalissues .	issues.	➢ NCERTTextbook			

CHEMISTRY

Month	Lesson&Topics	No.of Periods	LearningObjectives	Methodology/ Activities	TeachingAids/ Resources	Experiential Learning	Assessment tools	Learning Outcomes
April	**1.Solid state**	10	Studentswillstudyaboutthepropertiesof crystallineandamorphoussolids,typesof crystalline solids, crystal latticeand types of unit cell, Density of unit cell, packing efficiency, closepackingin1,2,3-dimensioncrystal lattice, imperfection insolids, electrical propertiesand semiconductors, magnetic properties.	Lecture method, Discussion method, Collaborating, classroom action research Question-answer method **Activity**-worksheetbasedon types of solids	Smart board modules, Atomicmodels,Periodic tablechart,NCERTtext books, chemistry lab manual.	Theywill differentiate between the properties of solids and will categoriesthem.	Class test, practicalwork with viva.	They will learn about types of solids, their properties,their structure,electricaland magneticproperties.
June	2.Solution	12	Concentration terms to express the concentration of solution, Types of solutions, Solubility, and Henry's law Raoults law, ideal and non-ideal solution, colligative properties, relative lowering Vapour pressure, elevation in boiling point,depressioninF.P.,osmoticpressure, vant-hoff factor,	Lecture method, Discussion method, Demonstration, Question-answer method **Activity**-Toanalysetheacid andbasicradicalinthegiven salt. **(NH4Cl)&(NH4Br)**.	Smart board modules, Atomicmodels,Periodic tablechart,NCERTtext books, chemistry lab manual.	Students will analyse the confirmation of Acidradicaland basic radicalby performingtheir individualtest	Class test, practicalwork with viva.	They will learn about the different types of solution,theirsolubility and their colligative properties with abnormalbehaviour.
July	3. Electrochemistry	10	Student will study about theworking of denial cell, electrode potential, measurementofE^0value,electrochemical series, strong and weak electrolyte, effect ofdilution,Kohlrauschlaw,functioningof primaryandsecondarycellwithreactions, Corrosion.	Lecturemethod,Discussion method, Demonstration, Question-answer method **Activity**-Toanalysetheacidandbasic radical in the given salt. Ammoniumacetateand oxalate.	Smart board modules, Atomicmodels,Periodic tablechart,NCERTtext books, chemistry lab manual.	Students will analyse the confirmation of Acidradicaland basic radicalby performingtheir individualtest	class observation andpenpaper test, Lab experiment with viva	They will learn about the working of electrolytic and electrochemicalcell withchemicalreactions.
	4. Chemical kinetics	10	Student will learn about the rate of reaction,molecularity&orderofreaction, integratedrateequationforzeroandfirst order reaction, Arrhenius theory and its mathematical rate expression, effect of catalyst on therateofreaction,numerical	Lecturemethod,Discussion method,Question-answer method **Activity**-Toanalysetheacidandbasic radical in the given salt. Leadacetate&Aluminum sulphate.	Smart board modules, Atomicmodels,Periodic tablechart,NCERTtext books, chemistry lab manual.	Students will analyse the confirmation of Acidradicaland basic radicalby performingtheir individualtest	Pen-papertest laboratory experiment with viva.	Studentwilllearnabout the rate of chemical reaction and order of reaction and its determination.

	5.Surface chemistry	8	They will study about the adsorption, its mechanism,typesofadsorptionwiththeir properties, Freundlich adsorption isotherm, colloids, classification of colloids, properties and its applications	Lecturemethod,Discussion method, Demonstration, Question-answer method **Activity**-Toanalysetheacidandbasic radical in the given salt. Bariumchlorideandcalcium carbonate.	Smart board modules, Atomicmodels,Periodic tablechart,NCERTtext books, chemistry lab manual.	Students will analyse the confirmation of Acidradicaland basic radicalby performingtheir individualtest		They will understand the concept of adsorption and types differenttypes,colloids and their properties.
August	6. Extraction andisolatio nof metals	6	students will learn the different steps to extract the metals from ores, its thermodynamic principle, extraction of iron,silver,zincetc;differentmethodsfor purification of metals.	Lecture method, Discussion method, Demonstration, Question-answer method **Activity**-PrepareM/20Mohr's salt solution. With the help of this solution, find the molarity andstrengthofgivenunknown KMnO4 solution.	Smart board modules, Atomicmodels,Periodic tablechart,NCERTtext books, chemistry lab manual.	. They will evaluatethe molarityand strength of KMnO4 solution by M/20solutionof Mohr's salt solution by volumetric analysis.	Class test, practicalwork with viva.	Studentwilllearnabout extraction and purification of metal from its ores with reactions.
	7.p-block elements	12	Studentswilllearnabouttheoccurrenceof elements,physicalandchemicalproperties of group 15, 16, 17 & 18 with chemical reaction, properties of their compounds, oxoacids & their formula, uses	Lecturemethod,Discussion method, Demonstration, Question-answer method **Activity**-Toanalysetheacidandbasic radical in the given salt. Magnesiumsulphateand copper sulphate	Smart board modules, Atomicmodels,Periodic tablechart,NCERTtext books, chemistry lab manual.	Students will analyse the confirmation of Acidradicaland basic radicalby performingtheir individualtest	Work sheet Class test, practicalwork with viva.	Studentwilllearnabout the chemistry of group 15, 16, 17 & 18 elementswiththeir properties.
	8.d&f-block elements	10	Definition of transition elements & their series,Physicalandchemicalpropertiesof d and f-block elements, their chemical reactions, chemistry of k2Cr2O7 and KMnO4 compounds, uses.	Lecturemethod,Discussion method, Demonstration, Question-answer method **Activity**-To identify the presence of functionalgroupinthegiven sampleoforganiccompound. Alcohol,phenol, carboxylic acid.	Smart board modules, Atomicmodels,Periodic tablechart,NCERTtext books, chemistry lab manual.	Students will analyse the confirmation of functionalgroup byperforming their individual test.	Work sheet Class test, practicalwork with viva.	Studentwilllearnabout the chemistry of transition and inner transitionelementswith theirproperties.
September	9.Co-ordination compounds	9	Doubleandcomplexsalt,Wernertheory, terms of complex compounds, IUPAC name, isomerism, bonding in complex compound, valance bond theory, crystal fieldtheoryfortetrahedralandoctahedral compounds, its applications.	Lecturemethod,Discussion method, Demonstration, Question-answer method **Activity**-Toanalysetheacidandbasic radical in the given salt. **(NH4Cl)**	Smart board modules, Atomicmodels,Periodic tablechart,NCERTtext books, chemistry lab manual.	Students will analyse the confirmation of Acidradical(Cl-) and basic radical(NH4+) byperforming theirindividual test	Work sheet Class test, practicalwork with viva.	They will understand theconceptofcomplex compounds with bondingandproperties.

I-TERM EXAM								
October	10.Alkylandaryl halides	10	Classification of alkyl and aryl halides, nomenclature, Nature of compounds, preparationsof compounds,physicaland chemicalpropertieswithreactions,SN1 & SN2 reactions with mechanism, polyhalogencompounds.	Lecture method, Discussionmethod, Demonstration, Question-answer method **Activity**-	Smart board modules, Atomic models, Periodictable chart, NCERT text books, chemistrylab manual.		Work sheet Class test, practicalwork with viva.	They will understand the propertiesofalkylandarylhalides andapplytheknowledgeinevery daylife
	11.Alcohol,phenol and ethers	12	Classification ofalcoholicandphenolic group, nomenclature, Nature of compounds, preparations of alcohol, phenolandether,physicalandchemical propertieswithreactions,mechanism, properties of ethanol uses of these compounds	Lecture method, Discussionmethod, Demonstration, Question-answer method **Activity**- To identify the presenceoffunctional groupinthegiven sample of organic compound.Alcohol, phenol,carboxylic acid	Smart board modules, Atomic models, Periodictable chart, NCERT text books, chemistrylab manual.	Studentswill analyse the confirmationof functional group by performingtheir individualtest.	Work sheet Class test, practicalwork with viva.	They will understand the propertiesofalcohol,phenoland ethersfunctionalgroupandapply the knowledge in everyday life.
November	12.Aldehyde, ketone and carboxylicacid	12	Common and IUPAC nomenclature of aldehyde, ketons and carboxylic acid functionalgroup,Natureofcompounds, chemicalreactionsfortheirpreparations, physical and chemical properties with reactions, mechanism, uses of these compounds	Lecturemethod, Discussion method, Demonstration, Question-answer method **Activity**- To identify the presenceoffunctional group in the given sample of organic compound.Aldehyde, ketone and amines	Smartboard modules, Atomic models, Periodictable chart, NCERT text books, chemistrylab manual.	Students will analyse the confirmationof functionalgroup by performingtheir individualtest.	Work sheet Class test, practicalwork with viva.	They will understand the preparation and properties of Aldehyde, ketone and carboxylic acidfunctionalgroupandapply the knowledge ineveryday life
	13.Nitrogen compounds	10	CommonandIUPACnomenclatureof amine functional group, Nature of compounds, chemicalreactionsfortheir preparations, physical and chemical properties with reactions, mechanism, Diazoniumcompounds,theirproperties &usesofthesecompounds	Lecturemethod, Discussion method, Demonstration, Question-answer method **Activity**- Investigativeproject work.	Smart board modules, Atomic models, Periodictable chart, NCERT text books, chemistrylab manual.	Studentwill performthe experimenton thegiventopic andwillanalyse the result with theconclusion.	Work sheet Class test, practicalwork with viva.	They will understand the preparation and properties of aminefunctionalgroupandapply the knowledge in everyday life
December	14.Biomolecules	8	Definitionofcarbohydrate, classification, monosaccharides, glucose and fructose, theirstructure&properties,disaccharides and polysaccharides, proteins,	Lecture method, Discussionmethod, Demonstration, Question-answer	Smartboard modules, Atomic models,	Students will analyse the confirmationof Acid radicaland	Work sheet Class test, practicalwork with viva.	They will learn about the compositionandfunctionsof carbohydrates, proteins and nucleicacid.

			classificationandproperties, fibrous and globular proteins, primary, secondary, tertiary structure of protein, enzyme, vitamins, nucleic acid DNA & RNA, their composition and bonding, their biologicalfunction.	method **Activity**- Toanalysetheacid andbasicradicalin the given salt. Zincsulphate,lead nitrate.	Periodictable chart, NCERT text books, chemistrylab manual.	basic radical by performingtheir individualtest		
	15.Polymers	6	Classification of polymers based on sources, mode, attractions betweenthe particles, mechanism of free radical polymerization,typesofpolymers,their preparation with reactions and uses.	Lecture method, Discussionmethod, **Activity**- Solvethework-sheet				They will learn about the classification and preparation of differentpolymersandtheiruses.
	16.Chemistryine verydaylife	4	Chemistryinmedicines,chemicalsin food, cleansing agents, soap &detergents.	Lecture method, Discussionmethod **Activity**– Solvethework-sheet				They will compresence the knowledgeofchemicalusedin dailylife.
December	Revision&I-preboard							
January	Revision&II-preboard							

PHYSICS

Month	Lesson&Topics	No.of Periods	Learning Objectives	Methodology/ Activities	TeachingAids/ Resources	Experiential Learning	Assessmenttools	LearningOutcomes
APR	Unit-1a)Electrostatic charges b) Electric field c) Electrostatic potentialandfluxd) Capacitance	23	Student will be abletolearnthe concept of electric force, Potential, electric field.	Introduction. Hypothesis, Demonstration, resultanddiscussion conclusion **Activity-** show the electrostatic effectduetoplasticandwoolcloth.	Smartboard,Teach Next modules Textbook,refreshers, internet, modules	Student will be able to learn to performactivity, basedontopics.	Penandpaper,project, Labactivity	Studentlearntabout, charges and its properties.
JUN	Unit-2CurrentElectricity a) Electric current & resistance b) Electric measurementc)Heating effects of current.	15	Studentwillbe able to learn aboutmagnetic effect of current.	Introduction. Hypothesis, Demonstration, resultanddiscussion ,conclusion . **Activity: -** to measure resistance voltagecurrentandcheckcontinuity of a given circuit usingmultimeter.	Smartboard,Teach Next modules Textbook,refreshers, internet, modules	Studentswilllearn the concept by performing the experiment based on. ohm's law, meter bridge, and potentiometer.	Penandpaper,project, Labactivity	Students are able to solvetheconceptual problemrelatedwith thetopics.
JULY	Unit-3Magneticeffectsof current and magnetism a) Magnetic field due to current b) Forces on charged particles in electric and magnetic fields	16	Studentswillbe able to learn aboutmagnetic force and magneticfield.	Introduction. Hypothesis, Demonstration, resultanddiscussion , conclusion. **Activity-functionof electromagnet.**	Smartboard,Teach Next modules Textbook,refreshers, internet, modules	Studentswillable to learn the concept about magneticfieldby performing activityrelatedto thetopics.	Penandpaper,project, Labactivity	Students are able to solve the problem relatedwiththetopics.
AUG	Unit-4Alternating currents,Electrical devices Unit-5Electromagnetic waves, Introductionof E.M.W. Maxwell's equationand Lorentz force	21	Student's will beabletolearn about the conceptrelated with A.C. circuit.	Introduction. Hypothesis, Demonstration, resultanddiscussion ,conclusion . **Activity**- To assemble a household circuitcomprisingthreebulbs,three switches,afuseandapowersource.	Smartboard,Teach Next modules Textbook,refreshers, internet, modules	Studentswillable to learn the applicationrelated concept based on E.M.W.	Penandpaper,project, Labactivity	Students are able to learn about the AC. Circuitandabletolearn theE.M.W.
SEP	Hertz experiments &electromagnetic spectrum Unit-6 Optics a)	18	Studentswillbe able to learn about the	Introduction. Hypothesis, Demonstration, resultanddiscussion conclusion.	Smartboard,Teach Next modules Textbook,refreshers,	**Studentswillable to calculate the focal length and**	Penandpaper,project, Labactivity	**Studentsareableto solve the problem relatedwithconcept.**

	Photometry b) Reflection of light c) refraction of lightd)Dispersionoflight e)opticalinstruments.		conceptrelated with lights.	**Activity**- to study the variation potentialdrop inlengthofawirefor a steady current.	internet,modules	**refractiveindex of lenses.**		
OCT	e) Huygens principle &interference&diffraction &polarization. Unit-7 Dual nature of matter & radiatUnit-8 Atoms&nucleia)atoms b)nuclei	18	Studentswill abletolearn about the concept.	Introduction. Hypothesis, Demonstration, result and discussion, conclusion **Activity**- To obtain the lens combination with the specified focallengthbyusingtwolensesfrom the given set of lenses.	Smartboard,Teach Next modules Textbook,refreshers, internet, modules	Student will be abletolearnthe concept-based experiment.	Penandpaper,project, Labactivity	Students are able to solve the problem relatedwithconcept.
NOV	Unit-9 Semiconductordevices a) conductors, insulators and semi- conductors b) semi-conductordevicesc) Logic gates	20	Studentareable to learn about semiconductors andits application.	Introduction.Hypothesis, Demonstration, result and discussion conclusion **Activity**- To identify a diode, an LED, a transistor, a resistor and a capacitorfromamixedcollectionof such items.	Smartboard,Teach Next modules Textbook,refreshers, internet, modules	Studentswillbe able to perform the experiment-basedactivityon P-N junction diode.	Penandpaper,project, Labactivity	Studentsareableto developtheconcept based on semiconductors.
DEC	unit 10. Communication	15	Studentswillbe abletosolvethe problemrelated with the communication.	Introduction. Hypothesis, Demonstration, resultanddiscussion conclusion **Activity**-Tostudyeffectofintensity of light on an LDR.	Smartboard,Teach Next modules Textbook,refreshers, internet, modules	Studentswillbe able to perform the experiment-basedactivityon thetopic.	Penandpaper,project, Labactivity	Studentsareableto understand the application of communication.

PHYSICALEDUCATION

Months	Topics&Sub-Topics	No of Periods	Learning Objectives	Methodology	TeachingTools /Resources	ExperientialLearning	AssessmentTools	LearningOutcome
June	Changing trends and career and physicaleducation	14	Meaningand Definitionof physical education	Lecture method, DiscussionMethod,&and Demonstration **Activity:** Studentswouldbetakento auditorium to watch gladiator movie	Smartboard Internet Flow chart Boardmarker	Students will become awareaboutfitnessand healthcare They will learn different forms ofactionsthatwere primitive.	Pen-paperTest,class response Physicalactivity Running Yoga	Childrenwillbecome awareabout changing trends in current physicaleducationsyllabus
July	1-olympicMovement2-Physical Fitness,Wellness and life style	**27**	Ancientand modern olympics, Components of wellness	Lecture method, DiscussionMethod,&and Demonstration **Activity:** Make a file showing the differencebetweenancient and modern Olympic.	Smartboard Internet Flow chart Boardmarker Pen Paper	Organisationalset-up SportsandChacha Nehru sports awards.	Pen-paperTest,class response Physicalactivity Running Yoga	childrenwillbecomeawareabout components of Health- Related Fitness
August	1-Yoga 2-Physical Activity 3- Test measurementand Evaluation.	**22**	Relaxation techniqueandconcentration	Lecture method, DiscussionMethod,&and Demonstration **Activity:** Studentswouldbe doing three types of asana's a) Cultural b) Meditative c) Therapeutic	Smartboard Internet Flow chart Boardmarker Yoga mat	**I**ntroduction to Asanas,Pranayamaandyoga skills	Pen-paperTest,class response Physicalactivity Running Yoga	Concept of physical Activity in termsofyogaandimportanceoftest and Measurement t and evaluation in sports
SEP	REVISION							
October	Fundamentalsof Anatomyand physiology	**20**	Definitionof Anatomy, Physiology and their importance	Lecture method, DiscussionMethod&and Demonstration **Activity:** Studentswouldbevisitto Biolab	Smartboard Internet Flow chart Boardmarker	Introduce function of Respiratorysystem,and properties of muscles	Pen-paperTest,class response Physicalactivity Running Yoga	Functions of skeletal system, Classification ofBonesandTypesof joints

November	-Kinesiology, Biomechanicsand sports 2- Psychologyand sports	**19**	Meaningand importanceof kinesiology and Biomechanic s inphysical education andsports	Lecture method, DiscussionMethod&and Demonstration **Activity:** Studentswouldbegofor 100 m race in field	Smartboard Internet Flow chart Boardmarker	Majormusclesaroundthe joints (neck, shoulder, Elbow, Hip and knees)	Pen-paperTest,class response Physicalactivity Running Yoga	Childrenwillllearnanalysisofskills of physical movement
Dec	-Traininginsports and 2- Doping	**22**	Knowledge about method of improving motorskills 2- disadvantageo fdoping	Lecture method, DiscussionMethod&and Demonstration **Activity:** Students would make projectsondifferenttypes ofdrugs.	Smartboard Internet Flow chart Boardmarker	Developing strength, Endurance,speedflexibility	Pen-paperTest,class response Physicalactivity Running Yoga	Specificfitnessandcontroldropping procedure
JAN	**REVISION**							
FEB	**REVISION**							

INFORMATIONPRACTICES

MONTH	TOPIC / CONCEPTAND SKILL	No of Periods	LEARNINGOBJECTIVE	METHODOOLOGY	TEACHING TOOL/ RESOURCES	EXPERIENTIA LLEARNING	ASSESSMENTO FTOOLS	LEARNING OUTCOME
Apr	Introductionof Numerical Functions	10	Reindexing, and altering labels.1D array, 2D array Arrays: slices, joins, and subsets,Arithmeticoperations on 2D arrays	Experimental Learning, Demonstrative Brain stroming,Interactive ,Communicative	Studentcannow deal with computer	pracitcally identify all the computer software and studydeplyabout computersystem	Given to identify morenewdevices and advcance AI devices	Studentarenowawareabout python numerical calculus
June	Introductionof Pythonpandas	8	AdvancedoperationsonData Frames:pivoting,sorting,and aggregation	Brainstroming, Experimental Learning, Demonstrative ,Interactive ,Communicative	ready to identify hardawaredevices	wewillrecoginize device of computer in lab	Giventoidentify morenewdevices	Studentsareabletodevelop applicationofnumberusing simplepython.
July	Introduction of Pythonpandaspart- 2	15	Iterating over a DataFrame,Binaryoperationin a DataFrame,Descriptive Statistics with Pandas	Communicative, Experimental Learning, Demonstrative Brain stroming,Interactive ,	Conditional statements:if,if-else, if-elif-else; simpleprograms:	for example learningofthese items absolute value, sort 3 numbers, divisibility.	anaconda software to runningprogram ofpython	Studentarenowabletouse, develop & debug programs independently.
Aug	Introduction plottingwithpyplot	10	Basic concept of Data representation:Binary,ASCII, Unicode	Experimental Learning, Demonstrative Brain stroming,Interactive ,Communicative	Suggested programs:finding averageandgrade for given marks, amount calculation for given cost-qty-discount,	perimeter-wise/area-wise cost calculation, interest calculation	Listand dictionary:finding the maximum, minimum, mean; linearsearchona list of numbers, and counting the frequencyof elements in a list usingadictionary.	student are able to plot very creative graphsusingpython.

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Sep	Basic Software Engineering(BSE)	12	Software Processes: waterfall model,evolutionarymodel,and component based model	Experimental Learning, Demonstrative Brain stroming,Interactive ,Communicative	Text handling: compare,concat,	Pythonmodules: importing math (sqrt, ceil, floor, pow, fabs), random(random, randint, randrange), statistics(mean, median)modules.	linkingofpython to SQL database	Student are now able to understand complete architecture of software development.
	RevisionofTermILesson1To8							
Oct	DataHandling	5	Everyday Influences of AI Globally,The Ever-changing FocusofAIresearch,Typesof AI careers.	Experimental Learning, Demonstrative Brain stroming,Interactive ,Communicative	substring operations (without using stringmodule).	To create a database,Toinsert the details of at least10studentin the above table	Array can be designedinLab	Studentarenowabletoconstruct table with their own idea
Nov	DataManagement	6	Djangobasedwebapplication that parses a GET and POST request, and	Experimental Learning, Demonstrative Brain stroming,Interactive ,Communicative	creationoftable bystudent	with the help of table we can connectpythonto program	connectorofsqlis used	Studentarenowabletodealwith MYSQL database management
Dec	Society,Lawand Ethicspart-1	12	Intellectualpropertyrights, plagiarism, digital rights management,	Experimental Learning, Demonstrative Brain stroming,Interactive ,Communicative	Nowstudentare abletoidentyall type of online attack in online system	Identyall typeof virusattactonline fraudawareabout that and work on itssafty	alltypeofonline sensitivewebsite mustbeidentfied	Studentarecabletoensuresafety and security in cyber-space.
Jan	Society,Lawand Ethicspart-2	10	Safelyaccessingwebsites: adware, malware, viruses,	Interactive ,Communicative Experimental Learning, Demonstrative Brainstroming,	report about bad thingsincomputer	Indian cyber securityauthority is working on	aware related to virusandtransfer of worms	Studentcanunderstandsocietal, legal and ethical aspect of technology
Feb	RevisionforTermII							