ANNUAL CURRICULUMPLAN CLASS:XI-SCIENCE

SESSION 2024-25

ASSESSMENTSTRUCTUREFORTHEACADEMICSESSION2024-25

SCHOLASTICAREA:

English	➢ ASL		**Passages,Grammar&Literature** ➢ Objectivetypequestionsincludingmultiplechoicequestions. ➢ Shortanswertypequestions/Longanswertypequestions	
Mathematics	➢ Project ➢ Viva		❖ Objectivetype/MultiplechoiceQuestions ❖ Very shortanswer ❖ Shortanswer/LongAnswerstypeQuestions	
Physics	➢ LaboratoryPractical ➢ Project ➢ Viva		❖ Objectivetype/MultiplechoiceQuestions ❖ Very shortanswer ❖ Shortanswer/LongAnswerstypeQuestions	
Chemistry	➢ LaboratoryPractical ➢ Project ➢ Viva		❖ Objectivetype/MultiplechoiceQuestions ❖ Very shortanswer ❖ Shortanswer/LongAnswerstypeQuestions	
Biology	➢ LaboratoryPractical ➢ Project ➢ Viva		❖ Objectivetype/MultiplechoiceQuestions ❖ Very shortanswer ❖ Shortanswer/LongAnswerstypeQuestions	
Physical Education	➢ FieldPractical ➢ Project ➢ Viva		❖ Objectivetype/MultiplechoiceQuestions ❖ Very shortanswer ❖ Shortanswer/LongAnswerstypeQuestions	
AdditionalSubject:				
IP	➢ Practical ➢ Project ➢ Viva		❖ Objectivetype/MultiplechoiceQuestions ❖ Shortanswer/LongAnswerstypeQuestions	
SchoolBasedAssessmentofCo-scholasticAreas(WorkEducation,GeneralStudies,Health& PhysicalEducation)				
AssessmentofCo-scholasticArea		InternallyAssessed		

GradingScaleforScholasticAreas

MarksRange	Grade
91–100	A1
81–90	A2
71–80	B1
61–70	B2
51–60	C1
41–50	C2
33–40	D
32&below	E(Needsimprovement)

1.Co-ScholasticActivities:

For the holistic development of the students, co-curricular activities in the following areas will be graded term-wise on a 3-point grading scale (**A=Outstanding**,**B=VeryGood**and**C=Fair**).Theaspectofregularity,sincereparticipation,outputandteamworkwillbethegenericcriteriaforgradinginthe following co-scholastic activities

Activity	Tobegradedona3-pointscale(A-C)
Generalstudies	Bytheconcernedteacher
HealthandPhysicalEducation(Sports/MartialArts/Yoga/NCCetc.)	BythePETeacher
Workeducation	Bytheconcernedteacher

2. Discipline(Attendance,Sincerity,Behaviour,Values):

Thestudentswillalsobeassessedforthedisciplinewhichwillbebasedonthefactorslikeattendance,sincerity,behaviour,values,tidiness,respectfulness for rules and regulations,attitudetowardssociety,nationandothers.GradingonDisciplinewillbedoneterm-wiseona3-pointgradingscale(**A=Outstanding**,**B=Very Good** and**C=Fair**).

ENGLISH

Month	Lesson&Topics	No.of Periods	Learning Objectives	Output (Activities)	TeachingAids/Resources	Experiential Learning	Assessment Tools	LearningOutcomes
June	ThePortraitofALady		Itisalovingtributeto his Grandmother and emotionalbondshared with her	Explanatory/Group Discussion	Chart/formats based on topics/NCERTtextbooks	we	Penpapertest /MCQ/oral-test	Throws light on the need of companionshipandfriendship notonlybyhuman-beingbut also byanimals and birds
	TheSummeroftheBeautifulWhiteHorse	3	Adventureandthrill of you hand strong tribecharacter	ReadingExplanation/Quiz	Chart/formatsbasedon topics/NCERTtextbooks	Will enhance the communicativeskilland criticalthinking	penpapertest /Mcq/oraltest	Importanceofkeepingthe valuesoftrustandhonesty
	Poem-APhotograph	2	Isdevelopingaesthetic sense amongthe learners. Memoriesarenot restrictedtoone's	Explanatory/recitation	chart/formatsbased ontopics/NCERTtext books	willenhancethechild's languageexpression andvocabulary	pen papertest /mcq/oraltest	Throws light onthemessageofimpermanence oflife
	WritingSkills-Notice,Advertisement	3	Learnnewforms ofadvertisingtechniques	Formatexplanation/smart board. Wat test	chart/formatsbased ontopics/NCERTtext books	willenhance thecreativethinking	penpaper-test /Mcq/oral-test	Enhancedtheknowledgeof vocabulary and creative writing
July	WritingSkills-Poster	2	Will enablethelearnerstoexpress theirideascohesively	Drawingposters forvariousreasons	chart/formatsbased ontopics/NCERTtext books	Willhelpthestudents inshowcasingtheir creativeaspects	pen papertest /mcq/oraltest	Enhancedtheknowledgeof vocabulary and creative writing
	WeAreNotAfraidToDie	3	learners willbeacquaintedtoa newkindof adventure,action,suspense	Reading, Explanation/Quiz	chart/formatsbased ontopics/NCERTtext books	Willenhancethecommunicativeskillandcriticalthinking	pen papertest /mcq/oraltest	learners willappreciate andimbibe thenever saydieattitudeandstrengths ofhope

	DiscoveringTut	3	ExplainsEgyptian beliefs andtraditionsabout theafterlife	Lectureandinteractive/Debate	chart/formatsbased ontopics/NCERTtext books	willdevelopthequality ofcrossingexamining andwill bring clarityandorganization inlanguage	pen papertest /mcq/oraltest	throwslightonthephysical aswellas mentalparticipationtoheritage andculture
August	TheAddress	3	ofcrisisthatweas anindividualencounter inour dailylife	Reading, Explanation/Quiz	chart/formatsbased ontopics/NCERTtext books	Willenhancethecommunicativeskillandcriticalthinking	penpaper-test /mcq/oral-test	Importance ofmemoryin one's life howagirlovercomesallthe hardshipsand wanted topreserve all thememoriesofhermother
	TheVoiceoftheRain	2	Comparativestudybetweenhumanlife andnature	Explanatory/recitation	chart/formatsbased ontopics/NCERTtext books	willenhancethechild's languageexpression andvocabulary	pen papertest /mcq/oraltest	Importanceoflove,reunion, andlonglastingrelationship.
	LandscapeoftheSoul	4	presents twoinstances ofpaintings toshowthebeauty anddifferenceinthe perceptionof painters	Lectureandinteractive/Speech	chart/formatsbased ontopics/NCERTtext books	will enhance thevoicemodulation andgestureofthechild	penpapertest /mcq/oral-test	the significanceof history inestablishingtheidentityofa culture
	TheAilingPlanet	3	raising severalissuesregarding thedeclininghealth oftheearth	Explanatory/Group Discussion	chart/formatsbased ontopics/NCERTtext books	will enhance thelanguagefluency andleadershipqualityof thechild	penpaper-test /mcq/oral-test	signifies theeternal rolethat therainplays innurturing,quenchingandpurifying thevariouselementsofEarth
	Ranga'sMarriage	3	is the conflictbetweentradition andmodernity	Explanatory/Group Discussion	chart/formatsbased ontopics/NCERTtext books	will enhance thelanguagefluency andleadershipqualityof thechild	penpaper-test /Mcq/oral-test	Oneshouldbepreparedfor his/her choices in life

	AlbertEinsteinAt School	3	Arefusaltoconfirmto theeducationandnot thelearningoffacts	Lectureandinterac tive/Debate	chart/formatsbased ontopics/NCERTtext books	willdevelopthequality ofcrossingexamining andwill bring clarityandorganization inlanguage	pen papertest /Mcq/oraltest	howagirlovercomesallthe hardshipsand wanted topreserve all thememoriesofhermother
October	TheBrowningVersion	3	To present the relationshipbetween a student and a teacher	Explanatory/Group Discussion	chart/formatsbasedon topics/NCERT text books	willenhancethelanguage fluency and leadership quality of the child	penpaper-test /Mcq/oral-test	Tobepunctualanddevelopa sense of duty and not to indulge in criticism
	Mother'sDay	3	status of womenintheir ownhousehold	Lecture and interactive/Speech	chart/formatsbasedon topics/NCERT text books	will enhance the voice modulationand gestureof thechild	penpaper-test /mcq/oraltest	Oneshouldnottakehis/her mother for granted as it is notatallarespectfulthing todo
	Childhood	2	focusesonthelossof innocence	Explanatory/recitati on	chart/formatsbasedon topics/NCERT text books	will enhance the child's languageexpressionand vocabulary	penpaper-test /mcq/oral-test	wefindhowourchildhood becomes memory
Novembe r	TheAdventure	3	Tolearnthevalue of adventurous activities	Reading, Explanation/Quiz	chart/formatsbasedon topics/NCERT text books	Will enhance the communicativeskilland criticalthinking	penpaper-test /Mcq/oral-test	Knowledge comes from experienceandperseveranceis priceless
	Birth	2	how to take quick decisionsatthetime ofemergency	Lecture and interactive/Speech	chart/formats based ontopics/NCERTtext books	will enhance the voice modulationand gestureof thechild	penpaper-test /mcq/oral-test	howonerepressesthe emotions

December	SilkRoad	3	importanceofsilkroadand religious beliefs attached with it	Reading, Explanation/Quiz	chart/formatsbasedon topics/NCERT text books	Will enhance the communicativeskill andcriticalthinking	penpapertest /mcq/oraltest	limittheoveruseofresources that are in limited amount
	WritingSkills-LetterWriting	5	Learn newforms of advertising techniques	Format explanation/Wattest	chart/formatsbasedon topics/NCERT text books	studentswillbeable to express their thoughts in more creativeway	penpapertest /mcq/oraltest	Enhanced the knowledge of vocabulary andcreativewriting
	TheLaburnumTop	2	Symbiotic relationship betweenthetreeandthe goldfinch the bird	Explanatory/recitation	chart/formatsbasedon topics/NCERT text books	willenhancethe child'slanguage expression and vocabulary	penpapertest /mcq/oraltest	wefindhowourchildhood becomes memory
January	Fatherto Son	2	portrayed the generations gapbetweenafatherandhis son	Explanatory/recitation	chart/formatsbasedon topics/NCERT text books	willenhancethe child'slanguage expression and vocabulary	penpapertest /mcq/oraltest	Comprehend and appreciate poetry,andexpresseffectively
	TheTale ofMelon City	3	knowledge,intelligenceand wisdom are extremely important for survival	Explanatory/Group Discussion	chart/formatsbasedon topics/NCERT text books	will enhance the languagefluencyand leadershipqualityof thechild	penpapertest /mcq/oraltest	Abletounderstandthattheruler ofthestatemustunderstandthe problems and needs of the people
	The Ghat oftheOnly World	4	Aboutfriendshipand commitment	Explanatory/Group Discussion	chart/formatsbasedon topics/NCERT text books	will enhance the languagefluencyand leadershipqualityof thechild	penpaper-test /mcq/oral-test	oneshouldbealwayscareful withrelationshipsasittakes years to build those relationships
February	Final-Exams						PEN PAPERTEST	

CHEMISTRY

MONTH	No. ofPeriods	Nameofunit	LEARNINGOBJECTIVES	TEACHINGAids &Resourses	METHODOLOGY/Activity	EXPERIENTIAL LEARNING	ASSESSMENTTOOLS	LEARNINGOUTCOME
June	10	**1.Somebasic principleofchemistry.**	Studentwillstudyaboutthe Classificationofmatter, Measurementin chemistry,SI units,Precision&Accuracy, Scientificnotation,Lawof chemicalcombination,Mole concept,differenttermsto expresstheconcentrationof solution. Limitingreagents, Numerical	Smartboard &Digi modules,Atomic models,Periodictable chart,internetNCERT textbooks,Modern abc,Dineshpublication	Lecturemethod,Discussion anddemonstrationmethod, Question-answermethod **Activity**–Toverifythelawof conservationofmass	Studentswillanalysis thelawof conservationofmass bytheexperiment andwillacknowledge itsapplications	Classresponse,Penpaper test,Labactivity,Work sheet,	Studentwilllearnabout thebasicconceptof chemistry, Differenttermof concentrationofsolution andbasictermsusedin themeasurement.
July	15	**2.Structureofatom**	Studentswillstudy thedifferentatomicmodels Bohr'smodel, Electromagneticradiation, PlanksTheory, and the natureoflight. Studentswillstudyabout: Heisenberg'suncertaintyprincipl e,Quantummodel andquantumnumbers, Differentrulestowritethe electronicconfigurations. quantummodel.	Smartboard &Digi modules,Atomic models, Periodictable chart,internetNCERT textbooks,Modernab c, Dineshpublication	Lecturemethod,Discussion anddemonstrationmethod, Question-answermethod **Activity**-Toanalysetheacid andbasic radical in the givensalt. **(NH4Cl)**	Studentswillanalyse theconfirmationof Acidradical(Cl-)and basicradical(NH4+) byperformingtheirind ividual test.	Classresponse,Penpaper test,Labactivity,Work sheet,Quiz.	Studentwilllearnabout differenttheoryand atomicmodelsofatom, andtheirsignificanceto understandthemicrostructur e of atom.

MONTH	No. ofPeriods	Nameofunit	LEARNINGOBJECTIVES	TeachingAids&Resources	METHODOLOGY/Activity	EXPERIENTIAL LEARNING	ASSESSMENTTOOLS	LEARNINGOUTCOME
July	10	**3.Periodicclassification ofelements** .	Students will study about the:Featuresof Mendeleev's tableandmodern periodic table with theircharacteristics, Features of s, p, dand- block elements, Periodicproperties Atomic size, Ionization energy,electron gain enthalpy,electronegativity,metallic&Non-metallic properties, diagonalrelation&anomalouspropertiesof II period elements.	Smartboard &Digi modules,Atomicmodels,Periodictablechart,internetNCERT textbooks,ModernABC, Dineshpublication	Lecture method, Discussion anddemonstrationmethod,Question-answer method **Activity**- To analyze theacidandbasic radical in the given salt.**(NH4Br)**	Studentswillanalyze theconfirmationof Acidradical(Br-)and basic radical(NH4+) by performingtheirindividual test.	Class response, Penpapertest,Labactivity,Work sheet, Quiz.	Student willunderstand thefeatures of modern periodiTable and the periodicproperties of differentelements.
August	15	**4.Chemicalbonding andmolecular structure**.	Students will learn about thetypes of bonding and thepropertiesofthesecompound,Ionic and covalent bond, Bondparameter,VSEPRtheory,VBT theory and the concept ofhybridizationanditstypes, MOTfor diatomic molecules. H-bondinganditstypes	Smartboard &Digi modules,Atomicmodels,Periodictablechart,internetNCERT textbooks,ModernABC, Dineshpublication	Lecture method, Discussion anddemonstrationmethod,Question-answer method Activity- **Activity**- Toanalyzethe acidand basic radical in the given salt.**(NH4)2C2O4** .	Students will analyzethe confirmation ofAcid radical (C2O4--)and basic radical(NH4+)byperformingtheir individual test.	Class response, Penpapertest,Labactivity,Work sheet, Quiz.	Studentwilllearnaboutthedifferenttheoryofchemical bonding andmolecular structure ofdifferent compounds withtheir properties. Studentswillunderstandthebehaviorof idealand realgas in different conditionwith different gas laws,properties of liquid.
	15	**5.Statesofmatter**	Students will learn about theProperties of gases,Different gaslaw, Boyle's law, Charles's law,Avogadro's law, Idealand realgas, Ideal gas equation, deviationtowardsidealbehavior,Properties of liquids.					

Sept	4	**6.Environmental Chemistry**	Studentswilllearnaboutgreen chemistryAtmosphere,Differenttypes ofpollutions,Photochemicalsmog, Ozonelayersoilerosions,Green chemistry.	Smartboard&Digi modules,Atomic models,Periodic tablechart, internetNCERT textbooks, ModernABC,	Lecturemethod, Discussion,Question-answermethod **Activity**-Preparereport ofsoilpollutionandwater pollutionofyourarea.	Studentscanapplythe abstractionandknowledge tomakeajudgement towardstheenvironment chemistry.	Class response, Penpaper test,Lab activity, Worksheet, Quiz.	Createawarenessaboutthe environmentandits Surroundingwithgreenchemistry.
					I-termexam			
Oct	15	**7.Thermodynamics**	Studentswilllearnthegeneralization ofdifferenttermsandconceptofthe lawsofthermodynamicsforthe spontaneousprocess.Enthalpy, Typesofenthalpy,Hess'slawandits application&numerical. First,secondandthirdlawof thermodynamic,itsmathematicalexpressi on,Spontaneitycriteria. EntropyandGibb'sfreeenergy.	Smartboard &Digi modules,Atomic models,Periodic tablechart, internetNCERT textbooks, ModernABC, Dinesh publication	Lecturemethod,Discussion anddemonstration method,Question-answer method **Activity-** Findthemolarityand strengthofHClsolutionby M/20solutionofNaHCO3.	Theywillevaluatethe molarityandstrengthof HClsolutionbyM/20 solutionofNaHCO3by volumetricanalysis.	Class response, Penpaper test,Lab activity, Worksheet, Quiz.	Studentwilllearnaboutthe differentlawsofthermodynamics, andthecriteria ofspontaneitybythe entropyandfreeenergy. .
Nov	15	**8.Organicchemistry , 9.s-blockelements**	Classificationofcarboncompounds, Alkanes,alkenesandalkynes,Homolog ousseries, IUPAC nomenclature,Isomerismandits types,mechanismcriteriaof chemical reaction. Qualitativeandquantitativeanalysis ofdifferentelements	Smartboard&Digi modules,Atomic models,Periodic tablechart, internetNCERT textbooks, ModernABC, Dineshpublication	Lecturemethod,Discussion anddemonstration method,Question-answer method **Activity**-Toanalyzetheacid andbasicradicalinthegiven salt. **Pb(NO3)2**and **Al2(SO4)3**	Studentswillanalyzethe confirmationofAcidradical (NO3-)andbasicradical (Pb2+)andAcidradical (SO4--)andbasicradical (Al3+)byperformingtheir individualtest.	Class response, Penpaper test,Lab activity.	Studentwilllearnaboutthe classification,IUPACnameofcarbon compoundsandalsothequalitative andquantitativeanalysisof elements.
	08		Studentswillstudyaboutthe Physicalandchemicalpropertiesofl andIIgroupelementsofs-block elements,Diagonalrelations, AnomalouspropertiesofLiandBe element.Someimportant compoundsofsodiumandcalcium.					Students willunderstand the propertiesofalkali andalkalineearth metalsandtheir compounds.

Dec	09	**10. p-blockelements**Physicaland chemicalproperties of 13 and14groupelements	Studentswill studyaboutthePhysicalandchemicalproperties ofI3and 14 group elements of p-blockelements, Diagonal relations,Anomalous properties of Boron andcarbon. Someimportantcompoundsof boron and carbon.	Smartboard&Digimodules,Atomicmodels, Periodictablechart, internetNCERTtextbooks,ModernABC,Dineshpublication	Lecturemethod,Discussionanddemonstrationmethod,Question-answermethod **Activity**- To analyze the acidand basic radical in the givensalt. **BaCl2** **Activity-** Find the molarity andstrength ofNaOH solutionby M/20 solution of oxalicacid.	Students will analyze theconfirmationofAcid radical(Cl-) andbasic radical(Ba2+) by performing theirindividualtest.	Classresponse,Penpapertest,Labactivity.	Students will understand thepropertiesofboronandcarbonfamily and chemistry of theircompounds.
	18	**11.Hydrocarbons**	Studentswill learn about theStructures, Physical and chemicalpropertieswithreactionsofalkanes,alkenes, alkynes and aromaticcompounds. chemical reaction ofpreparation, isomerism.			They will evaluate themolarity and strength ofNaOH solution by M/20solutionof Oxalic acid byvolumetric analysis.		Students will understand thepreparation and physical andchemicalpropertiesofalkanes,Alkenes,alkynesandbenzene.
Jan	10	**12.Equilibrium**	Studentswilllearn about the physical&chemicalequilibrium,theircharacteristics,Equilibriumstate,factorseffecting equilibrium state, Le-chatelierprinciple, Electrolytes, Theories ofacidand base, conjugated acid base pair,Oswald dilution law, pH value, commonion effect, Buffer solution.	Smartboard&Digimodules,Atomicmodels, Periodictablechart, internetNCERTtextbooks,ModernABC, Dineshpublication	Lecturemethod,Discussionanddemonstrationmethod,Question-answermethod **Activity**- Solve thenumericalproblems	Theywillsolveandevaluatethe work sheet, and willenhance the problem-solvingskill.	Classresponse,Penpapertest,worksheet.	They will enhance the knowledge ofequilibriumstateandfactors,concep of acid and base, electrolytes andtheir behavior.
		13. Redox reactions **14. Hydrogen**	conceptofoxidationandreduction,Different types of redox reactions,Oxidation numbers, Balancing ofredoxreaction. Preparationandpropertiesof hydrogen.	Smartboard&Digimodules,Periodictablechart,NCERTtextbooks,ModernABC, Dinesh publication	Lecturemethod,Discussionanddemonstrationmethod,Question-answermethod **Activity**- To analyses the acidand basic radical in the givensalt. **MgSO4**	Students will analyses theconfirmationofAcid radical(SO4- -) and basic radical(Mg2+) by performing theirindividualtest.	Classresponse,Penpapertest,Labactivity,Worksheet,Quiz	Student will learn about the concepof redox reaction and their types. Theywillalsogeneralizetheproperties of hydrogen.
Feb	RevisionandAnnualexam							

PHYSICS

Month	**Lesson&Topics**	**No.of period's**	**Learning Objectives**	**Methodology/ Activities**	**TeachingAids/Resources**	**ExperientialLearning**	**Assessmenttools**	**Learning Outcomes**
July	Unit-1Physical Worldand Measurements(a) Introduction(b) Systemofunits(c) Measurementsof length,massand time.(d)Dimensional Analysis(e)Errors of Measurements	23	Studentswillbeable tolearnabout measurementin physics.	Introduction. Hypothesis,Demonstration, resultanddiscussion, conclusion	Smartboard,TeachNext modules Textbook,refreshers, **Activity**:-Tomakeapaperscale ofgivenleastcount.	Experimentbasedon Verniercalipers,Screw gauge,and spherometer.	Penandpaper, project.Labactivity	Studentsareable tomeasurethe various dimension.
August	Unit-2Motionina plane Unit-3Lawsof Motion(a) Newton's lawofMotion	16	Studentswillableto understandthe conceptualand competitive knowledge.	Introduction. Hypothesis,Demonstration,re sultanddiscussion ,conclusion	Smartboard,TeachNext modules Textbook,refreshers, **Activity**:-Todeterminethe massofagivenbodyusinga meter'sscalebyprinciple moments.	Studentswillbeablelearn abouttopicswiththehelp ofvariousactivities.	Penandpaper, project,Labactivity	Studentsareable tosolvethe problemsrelated withmotion
Sep.	Frictionand Dynamicsofcircular motion. Unit-4Work,Energy andPower Unit-5Systemof Particlesand rotationalmotion (i)Centreofmass (ii)MomentofInertia	20	Studentswillbeable tounderstandthe conceptual knowledgeofforce energyandpower	Introduction. Hypothesis,Demonstration,re sultanddiscussion. conclusion	Smartboard,TeachNext modules Textbook,refreshers, **Activity**:-Toplotagraphfora givensetofdata,withproper choiceofscalesanderrorsbars.	Studentswillbeableto performthelabactivities basedonforcepower and energy	Penandpaper, project,Labactivity	Studentsareable tosolvethe mechanics problem related withconceptso

Oct.	Unit-6Gravitation-Kepler's law, Newton's law Gravityand Gravitational potential& energy	21	Studentwillbeable to learn about the gravitation and its application in the outer space	Introduction. Hypothesis,Demonstration,result and discussion, conclusion	Smartboard,TeachNext modules Text book,refreshers, **Activity**:-tomeasuretheforce of limiting friction Forrollingofarollerona horizontalplane.	A student will be able to perform the activity with thehelpofinclinedplane.	Pen and paper, project,Labactivity	Students are able to understand the concept of gravitationandits application
Nov.	Unit-7Propertiesof bulk matter, a) Solids b) Hydrostatics c) Hydrodynamics, d) thermal properties of matter	16	Studentswillbeable to understand the nature of plastic materialsandnature ofhydrostatic	Introduction. Hypothesis,Demonstration,result and discussion , conclusion	Smartboard,TeachNext modules Textbook, **Activity**:-tostudythevariation in range of a projectile with angle of projection.	Experimental based learningYoung'smodulusand Surface tension by travellingmicroscope	Pen and paper, project,Labactivity	Students are able toknowaboutthe elastic behaviour of different materials and hydrostatic
Dec.	Unit-8 Thermodynamics, hemodynamics Unit-9Behaviorof perfect gas and kinetic theory.	15	Studentswillbeto understandAbout Thermodynamics and behaviour of gasses.	Introduction. Hypothesis,Demonstration,result and discussion, conclusion	Smartboard,TeachNext modules Text book,refreshers, **Activity**: - To study the conservationofenergyofaball rolling down on an inclined plane (using a double inclined plane).	Experimentrelatedwith temperaturepressureand volume	Pen and paper, project,Labactivity	Studentsareable to understand about heat, temperature pressurein variouscondition
Jan.	Unit-10Oscillations and Waves.	10	Studentswillbeable tounderstandabout the frequency oscillations of longitudinaland transversewavesin various medium	Introduction. Hypothesis,Demonstration,result and discussion. conclusion	Smartboard,TeachNext modules. Textbook,refreshers, **Activity**:-Tostudyofenergyof a simple pendulum byplottinga graph between square of amplitude and time.	Students will be able to calculate the frequencyand tension arises in the medium with the help of resonance tube and sonometer.	Pen and paper, project,Labactivity	Studentsareable to calculate the frequencyspeed and time period of wave in the medium

MATHEMATICS

Month	Lesson&Topics	No.ofPeriods	LearningObjectives	Methodology/ Activities	TeachingAids/ Resources	Experiential Learning	Assessmenttools	Learning Outcomes
JUNE	1.Sets2.Relation and Function & Two Activities (I-Sets II-Relation and Function)	8+5+2=15	(a)Introduction (b)Learning about basic conceptofsets,Relation and Function (c)Toincreasethelevel ofunderstandingofSets ,RelationandFunctions, and its application	Explanation, Questioner. Problem solving, Induction and Deduction Method. And demonstration	Smart Board,Chart, model Modules, Internet,LessonPlan. TextBook,Ref.books and Competitive Exams Books andLab manual etc.	Different Practical Examples connectinginour dailylife.	Pen-paperTest, OralTest,Class Test,Labwork, Quiz, and Model Presentationetc.	Students will be able to solve all relatedproblems (general &practical)from differentsources. They will be alsodeveloped higher order thinkingskills.
JULY	3.Trigonometry 4.Mathematical InductionPrinciple 5.ComplexNumbers	10+4+4+2= 20	(a)Introduction (b)Learning aboutbasic concept of Trigonometry, MathematicalInduction Principle ,Complex Numbers. (c)Toincreasethelevel ofunderstandingabout Trigonometry, MathematicalInduction Principle ,ComplexNumbers,and itsapplication	Explanation, Questioner,problem solving method,Inductionand deductionMethod.	SmartBoard,Chart ,model Teach Next Modules CD,Internet , Lesson Plan. Textbook. books , Competitionbooks	Examples of differentPractical Examplesjessing in daily life.	Pen-papertest, Oraltest,Class test, Labwork,Quiz, Model Presentation	Studentswillbe abletosolvethe problem-based questions and develop higher thinking order skills.
AUGUST	5.Quadratic Equations 6. LinearInequalities 7.Permutationsand Combinations 8. BinomialTheorems & OneActivity(I-Permutation &Combination)	2+5+6+ 5+2 = 20	(a)Introduction (b)Learning about QuadraticEquations, Linear Inequalities, Permutations and Combinations , BinomialTheorems Toincreasethelevel of understanding about Quadratic Equations , Linear Inequalities , Permutations and Combinations , and BinomialTheoremsand its application in our dailylife	Explanation, Questioner,problem solving method, Induction and deductionMethod.	SmartBoard,Chart ,model Teach Next Modules CD,Internet , Lesson Plan.TextBook,ref. books,Competition booksPen-papertest, Oraltest,Class-test, Lab work, Quiz,Model Presentation	Examples of differentPractical Examplesjessing in daily life.	Pen-paper test, Oraltest,Classtest, Lab work,Quiz,Model Presentation	Studentswillbe abletosolvethe problem-based questions and develop higher thinking order skills.
SEPTEMBER	**RevisionForTerm-I**							
OCTOBER	9. Sequence and series & TwoActivities (I-Pascle'sTriangle	11+4=15	(a)Introduction (b)Learningabout Sequence and Series Toincreasethelevelof					

	II-Sequenceand series)		understanding about Sequence and series and its applicationinourdailylife					
NOVEMBER	10. StraightLines 11. ConicSections	7+ 8= 15	(a)Basic Concept of Straight lines,Conic Sections (b)Applicationof StraightlinesandConic Sequence	Explanation, Questioner,problem solving method,Inductionand deductionMethod.	SmartBoard,Chart, model Teach Next Modules CD, Internet,Examples Lesson Plan. Text Book,ref.books, Competitionbooks	Examples of differentPractical Examplesexisting in daily life.	Pen-paper test, Oraltest,Classtest, Lab work,Quiz,Model Presentation	Studentswillbe abletosolvethe problem-based questions and develop higher thinking order skills.
DECEMBER	12. Three-Dimensional Geometry 13. Limits and Derivatives & OneActivity (I-ThreeDimensional Geometry)	5+8+2=15	(a Introduction (b)Learningaboutbasic conceptof3DGeometry ,LimitsandDerivatives and its application in Dailylife.	Explanation, Questioner. problem solving method,Inductionand deductionMethod.	Smart Board, Chart, model Teach Next ModulesCD,Internet, LessonPlan. Textbook,ref.books, Competitionbooks	Examples of differentPractical Examplesexisting in daily life.	Pen-papertest, Oraltest,Class test,Labwork, Quiz, Model	Studentswillbe abletosolvethe problembased questions and develop higher thinking order skills.
JANUARY	14.Mathematical Reasoning 15. Statistics 16.Probability & One Activity [I-Probability]	4+6+8+2=20	(a)Introduction (b)Learning aboutbasic concept of Mathematical Reasoning,Statistics, Probability and its applicationinourdaily life.	Explanation, Questioner,problems olving method, Induction and deductionMethod.	Smart Board, Chart-model Teach Next Modules CD,Internet , Lesson Plan. Textbook. books , Competitionbooks	Examples of differentPractical Examplesexisting in daily life.	Pen-papertest, Oraltest,Class test,Labwork, Quiz, Model Presentation	Studentswillbe abletosolvethe problem-based questions and develop higher thinking order skills.
FEBURARY	**REVISION**							

CLASSXIBIOLOGYCURRICULUM

S.No	UNIT	NAMEOFUNIT	NO.OFPERIODS	MONTH	WORKINGDAYS	Marks
1.	I	**Diversityinthelivingworld**	23	April	22	10
2	II	**Structuralorganizationinplants& animals**	22	June	14	12
3	III	**Structureandfunction**	35	July	27	14
4	IV	**PlantPhysiology**	40	August	22	17
5	V	**HumanPhysiology**	40	October-November	20+10=30	17
			160		**139**	**70**
No.ofworking daysiscountedwiththeinstructionstocompletethesyllabusby November15th.						

Month	Topics&Sub-Topics	No of Periods	LearningObjective	Methodology	Teaching tools/Resources	ExperientialLearning	Assessment Tools	Learningoutcome
June	**01.TheLivingWorld** What is living? Biodiversity; Need for classification; three domains oflife;taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature; toolsforstudyoftaxonomy museums,zoologicalparks, herbaria,botanicalgardens	**04**	**Itwouldenablestudent:** • To introduce living –the meaning,itssalientfeatures and diversity. • Tounderstandthe systematic inthe studyof living world. • Tounderstandthebinomial nomenclature. • Toknowtaxonomic aids.	• Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Askstudentstomake herbariumfile.	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERT Text book **For activity:** Pen Paper	**Studentswouldbe:** Able to learn and observe nearby diversity. Abletomakeherbarium files.	• Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records	**Studentwouldbe able to:** Briefherbarium, taxonomy, nomenclature botanicalparks.

	02BiologicalClassification Fivekingdomclassification; Salient features and classification of Monera, Protista and Fungi into major groups:Lichens,Viruses and Viroids **03. PlantKingdom**Salient features and classification ofplants into major groups - Algae, Bryophyta, Pteridophyta, Gymnospermaeand Angiospermae(threetofive salient and distinguishing features and at least two examplesofeachcategory); Angiosperms - classification upto class, characteristic features and examples. **04.Animal Kingdom** Salient features and classification of animals, non-chordatesuptophyla level and chordates up to class level (three to five salient features and at least two examplesofeachcategory). (No live animals or specimen should be displayed.)	**04** **05** **07**	**Itwouldenablestudent:** • Toknowfivekingdom classification. • Toknowthecharacteristics ofallkingdoms separately • Toknowviruses,viroidsand lichens. **Itwouldenablestudent:** • Toknowthecharacteristics ofplants. • Discussthechallengesto plant life on land. • Describetheadaptationsthat allowed plants to colonize land **Itwouldenablestudent:** • Tounderstandtheanimal kingdom. • Tounderstandthetaxonomic position. • Tounderstandtheoriginand evolutionaryrelationshipof	• Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Makealistoffive characteristics of viruses whichare similar to living organism. • Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Studentswillcollect the seeds of gymnosperms present nearby. • Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERT Text book **For activity:** Pen Paper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERT Text book **For activity:** Pen Paper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens,	**Studentswouldbe:** Abletounderstand& observe biological diversitynear them. **Studentswouldbe** Able to recognize nearbyplantspecies their needs and functions. **Students would be** Able to recognize nearbyanimalspecies their needs and functions.	• Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale	**Studentwouldbe able to** Understand the ecological role of differentgroupsof organism. Understandtheneed and function of classification. **Studentwouldbe able to:** **1.** Understand the ecologicalroleof differentdivisions ofplants. **2.** To describe uniquecharacters of all division. **Studentwouldbe able to:** 1. Understand the ecological role of differentgroupsof chordates. 2. Todescribe

	PRACTICALS: **1.** Studyofthepartsofa compound microscope 2. Study of the specimens/slides/modelsa nd identification with reasons 3. Study of virtual specimens/slides/modelsa nd identification with reasons.	**03**	differentphylum.	• Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Make a collection of pictures of animals presentaroundyouin different habitats.	➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERT Text book **For activity:** Pen Paper	**Studentswould be** • Abletoknowallparts and functions of microscope. • Identifythe specimens.	• Quizinclass • Inclassactivity • Homework records	uniquecharactersof all organism. **3.** Torecognizelife functions of livingorganism. **4.** Recognize the ecologicalroleof phylum.
July	**05. Morphology of Flowering Plants** Morphologyand modifications:Morphology of different parts of flowering plants:root,stem, leaf, inflorescence, flower, fruit and seed (to be dealt along with the relevant experiment of thePractical Syllabus). **06.AnatomyofFlowering Plants** Anatomyandfunctionsof differenttissuesandtissue	**04** **03**	**Itwouldenablestudentto understand:** Themorphologyofallpartsof plant including fruits, seeds, flowers etc. **Itwouldenablestudentto understand:**	• Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Collect5different types of leaves aroundyouonthe basis of **a) Simple** **b) compound** • Lecture	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERT Text book **For activity:** Pen Paper Leaves ➢ SmartBoard, ➢ videos	**Studentswould:** Know the most importantimplicationof plant physiology is the elucidationof thesubtleprocessesthat regulate energy metabolism in green plants. **Students would:** Understandandrelate theanatomyofplants **Students would** Identify the part of animalslikeearthworm, cockroach and frog.	• Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical	**Studentwouldbe able to:** Understand the morphology, inflorescenceand structureofplant. **Studentwouldbe able to:** Understand the anatomyof floweringplants. **Studentwouldbe able to:** Understand

	systems. **07.Structural OrganizationinAnimal** Animal tissues; Morphology,anatomyand functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) ofaninsect (cockroach). (a brief account only) **PRACTICALS:** 4. **Studyoftissuesand diversityinshapesand sizes of plant cells** **5. Study of tissues and diversityinshapesand sizes of animal cells.**	**04**	Theanatomyofplants. **Itwouldenablestudentto understand:** Morphology of animals like frog,earthwormand cockroach**.**	• Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Observeadropofblood under microscope**.**	➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERT Text book **For activity:**Microscope Ethanol Blood Slide Needle	**Studentswould** Able to identify the shapesandstructureof plantandanimalcells**.**	approach • Checklist &Ratingscale • Quizinclass • Inclassactivity Homework records	important animal tissues, their functionsandrole. Describe earthworm, cockroachandfog indetail.
Nameo fmonth -July **No. of period s-** 12+12+ 11	**Celltheoryandcellasthe basic unit of life:** Structureofprokaryoticand eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructureand function); nucleus. **09.Biomolecules** Chemical constituents of livingcells:biomolecules,	**05**	**Itwouldenablestudentto understand:** ▪ The structures and purposes of basic components of prokaryotic and eukaryotic cells,especially macromolecules,membranes, and organelles. ▪ how these cellular components are used to generateandutilizeenergyin cells ▪ the cellular components underlyingmitoticcelldiv ▪ theprocessofcelldivisionin both somatic and germ cell. **Itwouldenablestudentto understand:** • themetabolic activitiesin mammalianbody.	• Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Identify major cell components; know structures and functions of components; understand how the partsofacellinteract together. • Lecture	➢ SmartBoard, ➢ videos ➢ diagrams (NCERT) mindmaps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books &referenc es NCERTTextbook **Foractivity:** Pen Paper ➢ SmartBoard, ➢ videos	**Studentswould** • Identify cell organellesandits functions. • Workoncelltheory. • Understand plasmolysis, deplasmolysis.	• Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records	**Studentwouldbe able to:** 1. Able to describe thefunctionandthe composition of the plasmamembrane. 2. Able to explain theprinciplesofthe celltheory. 3. Able to differentiate between prokaryotesand eukaryotes. 4. Able to understand the importanceofthe nucleus and its components. 5. Able to understandhowthe endoplasmic reticulumandGolgi apparatus interact with one another and know with

	structure and function of proteins,carbohydrates, lipids, nucleic acids; Enzymes-types,properties, enzyme action. **10.CellCycleandCell Division** Cellcycle,mitosis,meiosis and their significance. **PRACTICALS:** **5.** Studyofplasmolysisin epidermalpeels **6.** Studyofosmosisby potatoosmometer. **7.** Studyofmitosisinonion root tip cells and animals cells (grasshopper) from permanent slides. **8.** Studyofimbibitionin seeds/raisins. **9.** Study of external morphologyofcockroach through virtual images/models.	**04** **04** **05**	• thevarious biomoleculesin body. • the structural chemistry of proteins,carbohydrates,fats. • thefunctionsofbiomolecules in body. Secretion **Itwouldenablestudentto understand:** Theprocedureofcelldivision and how cell passes check points. Theprocessofmitoticand meiotic division.	• Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Makea3Dmodelof alphaorbetaprotein, with the ice-cream sticks. • Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Takesomeraisinsand dip them in ✓ Isotonic ✓ Hypotonic ✓ Hypertonic	➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook **Foractivity:** Ice-creamsticks Colours Glue ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references ➢ NCERTTextbook **Foractivity:** RaisinWater Salt/Sugar Beaker Pedtridish	**Students would** Conceptualizeand relate to enzyme, proteinsandantibiotics structureandfunctions. **Studentswould** • Conceptualize Mitosis and meiosis andtheir significance • Gene expressions • Celldivision **Studentswouldwork on:** • Plant-water relations • Importanceof permeability, • diffusion,osmosis, Plasmolysis, imbibition, • Absorptionofwater	• Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records	which other organellestheyare associated. 6. Able to Identify the three primary components of the cell's cytoskeleton andhowtheyaffect cellshape,function, and movement. **Studentwouldbe able to:** 1.Understand the physiology at cellularandsystem levels. 2.Describetherole and functions of different biomolecules. 3.Understand meiosisandmitosis.
-	11.**TransportinPlants**	**04**	**Itwouldenablestudentto**	• Lecture	➢ SmartBoard,	**Studentswould:**	• Observations	**Studentwould be**

August	Movement of water, gases and nutrients; cell to cell transport,diffusion, facilitated diffusion, active transport; plant-water relations, imbibition, water potential, osmosis, plasmolysis; long distance transport of water - Absorption, apoplast, symplast,transpirationpull, rootpressureandguttation; transpiration, opening and closing of stomata; Uptake andtranslocationofmineral nutrients - Transport offood,phloemtransport, mass flow hypothesis. **12. Mineral Nutrition** Essential minerals, macro-andmicronutrientsandtheir role; deficiency symptoms; mineraltoxicity; elementary idea of hydroponics as a method to study mineral nutrition; nitrogen metabolism, nitrogen cycle, biologicalnitrogen fixation. **13. Photosynthesis in Higher Plant** Photosynthesis as a means ofautotrophicnutrition; site ofphotosynthesis, pigments involved in photosynthesis(elementary idea); photochemical and biosynthetic phases of photosynthesis;cyclicand	**05** **08**	**understand:** • Translocationoforganic solutes • Sourceandsinkrelationships • Growthanddevelopment • Physiology-conceptofbiotic, abiotic and xenobiotic stresses. **Itwouldenablestudentto understand** • Mineralnutritionandmineral salt absorption • Criteriaofessentialityof elements • Microandmacro nutrients • specific functions and deficiency symptoms, mineralsaltabsorption **Itwouldenablestudentto understand** • Photosynthesis:photolysisof water, • cyclicandnon-cyclic	• Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Keep a plant pot Filledwithlotsof waterobservethe process in the morning. • Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Give one spoon urea toaplantandobserve the change in it. • Lecture • Interaction • Demonstrationof models,	➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:**Plant PotW aterSo ilPen Paper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** Urea plant ➢ SmartBoard, ➢ videos	▪ Movement of water withintheplantbody. ▪ Translocationof organicsolutes. ▪ Plant-soil-water relationship. **Studentswould:** ▪ Determine the osmoticpotentialof cell sap by plasmolyticmethod. ▪ Determinethewater potential of plant tissue. ▪ Soiltoplant-water potential, osmotic potential **Studentswould:** ▪ Determine the stomatalindex, stomatalfrequency and estimate the transpirationrateof	• Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach	**ableto:** ▪ Know the most important implication of plantphysiology istheelucidation of the subtle processes that regulate energy metabolismin greenplants. **Studentwouldbe able to** • Understandand explainMineral nutrition • deficiency, symptoms, disease &function s • Translocationof organicsolutes. **Student would be ableto Understand** • Photosynthesis, • Ultrastructureof chloroplast,

	non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration;C3andC4 pathways; factorsaffecting photosynthesis. **14. Respiration in Plants** Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energyrelations-numberof ATP molecules generated; amphiboles pathways;respiratory quotient. **15. PlantGrowthand Development** Seedgermination;phasesof plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence ofdevelopmentalprocesses in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA; seed dormancy; vernalization; photoperiodism. **PRACTICALS:** 10. Studyofdistributionof stomata in the upper and lower surface of leaves 11. Comparativestudyofthe ratesoftranspirationinthe	**08** **05**	• photophosphorylation, • electrontransportsystem, • C3 cycle, glycolytic metabolism(C2cycle),CAM pathway, C4 cycle **Itwouldenablestudentto understand** • photorespiration • Aerobicrespiration, • Glycolysis(EMP,PPP)and • TCAcyclesanditsregulation • anaerobicrespiration • mechanismandfactors **Itwouldenablestudentto understand** Mechanismoftranslocation, diffusion, • Munchhypothesis,source and sink relationships • Phagesofgrowth,growth regulation, • Physiologicalroleand mechanismofaction	• Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Makealistofbacteria's havingautotropicmode of nutrition. • Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Separate plant pigmentsthrough paper chromatography. • Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects	➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** Pen Paper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook**For activity:**Pencil Chromatographypaper SpinachAcetone/ether ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures,	differenttypesof leaves. ▪ Photosynthesis: photolysis of water, cyclicandnon-cyclic photophosphorylation ,electrontransport system. **Studentswould:** • DetermineRQof different plant material • Understand C3 cycle,photorespiratiana nd glycolytic metabolism(C2 cycle), CAM pathway, C4 cycle. **Studentswould:** • Observephagesof growth, growth regulation • Observephysiology of flowering - photoperiodismand vernalization • Understand xenobioticstresses • Cropdomestication	• Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity Homework records	photosynthetic pigments, • Conceptsoftwo Photosystems **Studentwouldbe able to** Understandtypesof respiration – Aerobic:Glycolysis, TCA cycle ETS (Oxidative phosphorylation) respiration. **Studentwouldbe able to** • Physiologicalrole andmechanismof action (Auxins, cytokinins, GA, ABA,ethylene); • Physiology of flowering - photoperiodism andvernalization; • Seeddormancy-typesandcauses, • methodsof

	upperandlowersurfaceof leaves 12.Studyanddescriptionof three locally available common flowering plants, 13.Preparationandstudyof T.S.ofdicotandmonocot roots and **s**tems **14**.Separation of plant pigments through paper chromatography 15. Studyoftherateof respiration in flower buds/leaf tissue and germinating seeds 16. Study of different modificationsinroots, stems and leaves.	**05**		• Seminars **ACTIVITY:** Make a list of phytohormones, its locationinplantand itsfunction.	➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** Pen Paper	**Studentswould:** • Identifystructureof stomata. • Calculatetherateof transpiration. • Observeandidentify thetypes of flower. • Differentiate dicot andmonocotplants root and stem structure. • Separatepigmentsof chlorophyll by chromatography. • Observe modificationsin plants. • Identify the rate of respirationinseeds.		overcoming dormancy; • senescence and aging; stress physiology-concept ofbiotic, abiotic and xenobiotic stresses.
SEP	**REVISION**							
Octobe r	**16. Digestionand Absorption**Alimentary canal and digestiveglands,roleof digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorptionandassimilation of proteins, carbohydrates andfats;calorificvaluesof proteins,carbohydratesand fats; egestion; nutritional and digestive disorders - PEM, indigestion, constipation, vomiting, jaundice, diarrhea. **17. Breathingand**	**07**	**Itwouldenablestudentto understand:** • themetabolic activitiesin mammalianbody. • thevarious biomoleculesin body. • theprocessofdigestion.	• Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Observe the daily routine and make the list of food we are havingthoughoutthe day, calculate the uptake of calories in one day.	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** Pen Paper	**Studentswould:** • Beableconceptualizet hedigestivefunction • Workonmetabolism of fat, protein, carbohydrate, vitamins and minerals.	ObservationsTest ing &Records Practical approachChecklist &Rating scale Quiz in class Inclassactivity Homework records	**Studentwould be able to:** • Understandthe physiology at cellular and systemlevels. • Describe the roleandfunctions of digestive system. • Understand normal and abnormal functions&know physiologic alparametersare measured in mammals. • Describethe physiology ofdigestion howmammalian bodygetnutrition

	Exchange of Gases Respiratory organs in animals (recall only); Respiratory system in humans;mechanismof breathingand its regulation in humans - exchange ofgases,transport of gases and regulation of respiration, respiratory volume;disordersrelatedto respiration - asthma, emphysema, occupational respiratorydisorders. **18. Body Fluids and Circulation** Compositionofblood, blood groups, coagulation of blood; composition of lymph and its function; humancirculatorysystem-Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure. **19. Excretory Products and Their Elimination** Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretorysystem–structure and function; urine formation,osmoregulation;	**07** **05**	**Itwouldenablestudentto understand:** • Thephysiologyofbreathing and respiration in human body. • Transportationofgases. • Celltocellinteractionofrole ofhemoglobin. • Variousdiseasesof respiratorytrack. **Itwouldenablestudentto understand:** • Thephysiologyofcirculatory system in human body. • Thebloodflowin mammalianbody. • Variousdiseasesof circulatorysystem. **Itwouldenablestudentto understand:**	• Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Make the data of numberofpatientsof asthma in five cities of your state. • Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Take the blood pressureofaperson before and after exercise. • Lecture • Interaction	➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** Pen Paper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** BloodPressuremachine ➢ SmartBoard, ➢ videos	**Studentswould:** • Be able to find respiratoryquotientin different cases. • Work on fermentation, and various types of respiratorymodes. • thegaseoustransport and the structure involved in gaseous transport in mammalianbody. **Studentswould** • Interconnect it with physics by learning ECG,cardiogrametc. • Abletounderstand different diseases related to heart.	• Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records	fromdifferent biomolecules **Studentwould be able to** • Describethe physiologyof respiratory • Define normaland abnormal functions. • Understandhow physiologic al parameters are measured in mammals • Describe the role of respiratory system **Student wouldbe ableto** • Describethe physiologyof circulatory system • Definenormal andabnormal functions. • Understandhow physiological parameters are measured in mammalsDescribe ECG, cardiacdisorder. **Studentwould be able to** • Describe the structure of urinarysystem. • Functionof

	regulationofkidney function - renin - angiotensin, atrial factor,ADHanddiabetes insipid us; role of other organs in excretion; disorders - uremia, renalfailure, renalcalculi, nephritis; dialysis and artificial kidney, kidney transplant. **20.Locomotionand Movement** Types of movement - ciliary,flagellar,muscular; skeletalmuscle-contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal system - myasthenia gravis, tetany, muscular dystrophy, arthritis,osteoporosis, gout. **PRACTICALS:** **17. Testforthepresenceof sugar, starch, proteinsand fats. Detection in suitable plant and animal Materials.** **18. Observation and comments on the experimentalsetupfor showing:** **a) Anaerobicrespiration** **b) Phototropism** **c) Effectofapicalbud removal**	**07** **05**	• Thephysiologyofexcretion in human body. • Nephronthestructuraland functional unit of life. • Osmoregulation. • Artificialkidney. **Itwouldenablestudentto understand** • The physiology of locomotioninhumanbody. • Vertebralcolumn • Slidingtheory • Disordersofmuscular systems	• Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Makelistofanimals on the basis of removal of nitrogenouswaste. • Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Visit to nearby physiotherapistand observethepatientof spondylitis and arthritis.	➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** Pen Paper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** Pen Paper	**Studentswould** • Understandthetoxic removal from differentorganism. • Abletocheckthe urine waste, **Studentswould** • Understand the skeletalsystem,feel the joints and movement. • Conceptualizeuseof ATP in movement byinterconnectingit with sliding theory.	• Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records	urinarysystem. • Skinex cretory product. • Nameof different excretory products **Studentwould be able to** • Understand difference between locomotionand movement. • Learn sliding theory. • ATP consumption in movement. • Different disorders.
Novem ber	**21. NeuralControland Coordination**	**07**	**It wouldenablestudent:** 1.Tounderstandthetypes	• Lecture • Interaction	➢ SmartBoard, ➢ videos	**Studentswould**: • Establish	• Observations • Testing	**Studentwould be able to:**

	Neuron andnerves; Nervoussysteminhumans-central nervous system; peripheral nervous system and visceral nervoussystem; generation and conduction of nerve impulse; reflex action; sensoryperception; senseorgans;elementary structureandfunctionsof eye and ear **22.ChemicalCoordination and Co –Ordination** Endocrine glands and hormones;humanendocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo - and hyperactivityand related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goiter, diabetes,Addison'sdisease. **PRACTICALS:** **19. Study of human skeleton and different types of joints with the help of virtual images/models only.** **20.Test for presence of urea ,sugar ,albuminand bile salt in urine.**	**08**	mechanismofworkingofnerve cells. 2. Signaltransmission 3. Communicationofnervous system. **Itwouldenablestudent:** 1. Tounderstand thenatureof endocrine glands and their secretion. 2. Hormonal imbalance Differentdiseasesrelatedto it.	• Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Observethereflex actionsindifferent age groups, and calculate the time taken by them to react. • Lecture • Interaction • Demonstrationof models, • Groupassignment brainstorming • Discussion • Case-study • Fieldexercise • Projects • Seminars **ACTIVITY:** Makethelistof changes during puberty.	➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** Pen Paper ➢ SmartBoard, ➢ videos ➢ diagrams(NCERT) mind maps ➢ charts ➢ specimens, ➢ models ➢ pictures, ➢ actualobjects ➢ flashcards ➢ slides ➢ chalk-board ➢ books&references NCERTTextbook **Foractivity:** Pen Paper	therelation between noiseandphysiology ofbrain • (e.g.headache). • Work on reflexactions **Students would:** Understandthenatureof endocrine glands and theirsecretion.	&Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records • Observations • Testing& Records • Practical approach • Checklist &Ratingscale • Quizinclass • Inclassactivity • Homework records	• Tabulatethe structureand function of humanbrain. • Identifythe structure of spinalcord. **Studentwould be able to:** • Interpretthe significanceof feedback mechanism • Correlatethe function of different hormones as mean of information transmissionin humanbody.

INFORMATIONPRACTICS

MONTH	NO.OFWORKINGDAYS	TOPIC / CONCEPTAND SKILL	No of periods	LEARNING OBJECTIVE	METHODOOLOGY	TEACHINGAIDS/ RESOURCES	EXPERIENTIALLEARNING	ASSESSMENTOF TOOLS	LEARNING OUTCOME
Jun	14	ComputerSystem	8	Introduction,ComputerSystem ,Computer System and DataSoftware	Experimental Learning, DemonstrativeBrain storming,Interactive, Communicative	By giving practical program,alsosuggesting algorithm to program conversion	Practically identifyallthe computer software and studydeeply aboutcomputer system	Given to identify more newdevicesandadvance AIdevices	Student are now awareabout pythonnumerical calculus
Jul	26	GettingStartedwith python	15	Python,Pluses,Python-SomeMinuses,Workingin Python,FirstScipt	Brainstorming, Experimental Learning, Demonstrative, Interactive, Communicative	Text book National Council of Educational Research and Training (NCERT)andReference Books.	Wewillrecognize device of computer in lab	Giventoidentifymore new devices	Studentsareable to develop application of number using simplepython.
Aug	24	Python Fundamentals	10	Python Character Set,Tokens,Barebonesof Python Program,Variables and Assignments	Communicative, Experimental Learning, DemonstrativeBrain storming,Interactive,	Text book National Council of Educational Research and Training (NCERT)andReference Books.	for example, learningofthese items absolute value, sort 3 numbers, divisibility.	Anacondasoftwareto running program of python	Studentarenow able to use, develop&debug programs independently.
Sep	26	DataHandling	12	Basic concept of Data representation:Binary, ASCII, Unicode	Experimental Learning, DemonstrativeBrain storming,Interactive, Communicative	Text book National CouncilofEducational Research and Training(NCERT)and Reference Books.	perimeter-wise/area-wise cost calculation, interest calculation	List and dictionary: finding the maximum, minimum, mean; linear search on a list of numbers,andcountingthe frequencyofelementsina list using a dictionary.	studentareableto plotverycreative graphs using python.

Oct	14	Flowofcontrol	5	Types of Statements in python,If elseNested if else,RepetitionofTasks, Range Function,Iteration /loopingstatements	Experimental Learning, DemonstrativeBrain storming,Interactive, Communicative	Text book National CouncilofEducational Research and Training(NCERT)and Reference Books.	Pythonmodules: importing math (sqrt, ceil, floor, pow, fabs), random(random, ran dint, ran range), statistics (mean, median) modules.	Linkingofpythonto SQL database	Student are now abletounderstand complete architecture of software development.
		RevisionofTermILesson1To8							
Nov	19	ListManipulation	8	CreatingandAccessinglist, list operations,Making true copy of a list,list functions and Methods	Experimental Learning, DemonstrativeBrain storming,Interactive, Communicative	Text book National Council of Educational Research and Training (NCERT)andReference Books.	To create a database, To insertthedetails of at least 10 student in the abovetable	Arraycanbedesignedin Lab	Studentarenow abletoconstruct table with their ownidea
Dec	25	Dictionaries	12	DictionaryKeyValue Pairs, Functions and Methods	Experimental Learning, DemonstrativeBrain storming,Interactive, Communicative	Text book National CouncilofEducational Research and Training(NCERT)and Reference Books.	with the help of table, we can connectpythonto program	ConnectorofSQLisused	Student are now able to deal with MYSQLdatabase management
Jan	24	DatabaseConcepts Structured Query Language(SQL)	13	File Based System,Relational Database Model,Relational model terminology,history of MYSQL	Experimental Learning, DemonstrativeBrain storming,Interactive, Communicative	Nowstudentisableto identalltypeofonline attackinonlinesystem	Identsalltypeof virus attract online fraud awareaboutthat and work on its safety	All type of online sensitivewebsitemustbe identified	Studentarecable to ensure safety and security in cyber-space.
Feb	17	Emerging Trends	8	Artificial Intelligence,Robotics,BigData ,Internet of Things(IOT) Cloud Computing	Interactive, Communicative Experimental Learning, DemonstrativeBrain storming,	Text book National CouncilofEducational Research and Training(NCERT)and Reference Books.	Indian cyber securityauthority is working on	Awarerelatedtovirusand transfer of worms	Student can understand societal,legaland ethical aspect of technology
Feb	17	RevisionforTermII							

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-olympic Movement 2-Physical Fitness,Wellness and life style	**27**	Ancientand modern olympics, Components of wellness	Lecturemethod, 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 componentsofHealth-Related Fitness
August	1-Yoga 2-Physical Activity 3- Test measurementand Evaluation.	**22**	Relaxation techniquean dconcentratio n	Lecture method, DiscussionMethod,&and Demonstration **Activity:** Studentswouldbedoing 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	Childrenwilllearnanalysisofskills 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**							