

ANNUAL
CURRICULUM
PLAN

CLASS XII SCIENCE
(SESSION: 2019-20)

(to be read with CBSE Curriculum available on
CBSE Website: cbseacademic.in)

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GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL

ANNUAL CALENDAR (SESSION: 2019-20)

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
April 2019 (Working days = 23)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
	Session begins					
7	8	9	10	11	12	13
World Health Day					Baisakhi Celebrations	Holiday (Ram Navmi)
14	15	16	17	18	19	20
Baisakhi / Dr. Ambedkar Jayanti			Holiday (Mahavir Jayanti)	World Heritage Day	Holiday (Good Friday)	
21	22	23	24	25	26	27
		World Book & Copyright Day		Inter House Solo Song & Dance (Sr.) Competition	Inter House Volleyball Match	
28	29	30				
		Parent Teacher Meeting				

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
May 2019 (Working days = 12+13)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
			Intl. Labour Day		Commencement of Periodic Test 1	
5	6	7	8	9	10	11
		Rabindranath Tagore's B'Day	World Red Cross Day	Culmination of Periodic Test 1		Holiday for students on account of 2 nd Saturday
12	13	14	15	16	17	18
Mother's Day			International Day of the Family	* Commencement of Summer Break for Class LKG - VIII / Extra Class for IX - XII		Holiday (Buddha Purnima)
19	20	21	22	23	24	25
	CAREER WEEK					
26	27	28	29	30	31	* subject to change as per Govt. Instructions
					Anti Tobacco Day	

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
June 2019 (Working days = 01)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
	Commencement of Summer Break for Class IX - XII		Holiday (Id-Ul-Fitr) World Environment Day			
9	10	11	12	13	14	15
16	17	18	19	20	21	22
				International Day of Yoga		
23	24	25	26	27	28	29
30						

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
July 2019 (Working days = 26)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
	The school will open after Summer Vacation Commencement of Van Mahotsav Week					
7	8	9	10	11	12	13
				World Population Day		Holiday for students on account of 2 nd Saturday
14	15	16	17	18	19	20
					Inter House Solo Song (Jr.) Competition	Inter House Yoga Competition
21	22	23	24	25	26	27
				Inter House Solo Dance (Jr.) Competition	Inter House kho-kho competition	
28	29	30	31		Kargil Victory Day	World Nature Conservation Day
	Investiture Ceremony		Parent Teacher Meeting			

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL

ANNUAL CALENDAR (SESSION: 2019-20)

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
August 2019 (Working days = 22)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3 Holiday (Teej)
4	5	6	7	8	9	10 Holiday for students on account of 2 nd Saturday
11	12 Holiday (Id-Ul-Zuha)	13 Independence Celebrations Week Commencement of Sanskrit Week	14 Independence Celebrations Week	15 Holiday (Independence Day & Rakshabandhan)	16 Inter House Basketball Match	17
18	19	20	21 World Senior Citizens' Day	22	23	24 Holiday (Janmashtami)
25	26	27 Inter House Solo Song (Sr.) Competition	28 Inter House Solo Dance (Sr.) Competition	29 National Sports Day	30 Inter House Taekwondo Competition	31 Parent Teacher Meeting

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
September 2019 (Working days = 23)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5 Teachers' Day Celebrations	6	7
8	9 Commencement of Half Yearly Exam.	10 Holiday (Muharram)	11	12	13	14 Holiday for students on account of Second Saturday
15	16	17 Culmination of Half Yearly Exam.	18	19	20	21
22	23	24	25	26	27 Inter House Badminton Match	28 World Tourism Day
29 World Day	30 Parent Teacher Meeting					

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
October 2019 (Working days = 20)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 International Day for the Elderly	2 Holiday (Gandhi Jayanti)	3	4 World Animal Welfare Day	5
6	7 Holiday (MahaNavami)	8 Holiday (Dussehra)	9 World Post Day	10 National Post Day World Sight Day	11 Intl. Day of the Girl Child	12 Holiday for students on account of 2 nd Saturday
13	14	15	16 World Food Day	17 Holiday (Karva Chauth)	18 Inter House Football Match	
20	21	22	23	24 United Nations Day World Devp. Information Day	25	26
27 Diwali	28 Holiday (Govardhan Pooja)	29 Holiday (Bhai Dooj)	30	31		

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
November 2019 (Working days = 23)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 Holiday (Haryana Day)	2
3	4	5 World Tsunami Awareness Day	6	7	8	9 Holiday for students on account of 2 nd Saturday
10 Id-E-Milad	11	12 Holiday (Guru Nanak Devji's Birthday)	13	14 Children's Day Celebrations Diabetes Day	15	16
17	18	19	20	21	22 Inter House Chess Competition	
24	25	26 Constitution Day (National Law Day)	27	28	29 Inter House Group Song Competition	30 Parent Teacher Meeting

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL

ANNUAL CALENDAR (SESSION: 2019-20)

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
December 2019 (Working days = 22)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 World Day of the Handicapped	4 Indian Navy Day	5	6	7 Indian Armed Forces Flag Day
8	9 Commencement of Periodic Test 2 / Pre-Board Exam.	10 Human Rights Day	11	12	13	14 Holiday for students on account of 2 nd Saturday
15	16	17 Culmination of Periodic Test 2 / Pre-Board Exam.	18	19	20	21 Inter House Group Dance Competition
22 National Mathematics Day	23 Farmer's Day (Kisan Diwas)	24 Christmas Celebrations	25 Holiday (Christmas) Good Governance Day	26	27 Annual Sports Meet	28 Parent Teacher Meeting
29	30 *Commencement of Winter Break	31	* subject to change as per Govt. instructions			

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
January 2020 (Working days = 21)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4 *Culmination of Winter Break
5	6	7	8	9	10	11 Holiday for students on account of 2 nd Saturday
12 Santosh Wickramada's Day	13	14	15 Holiday (Makar Sankranti)	16 Commencement of Pre-Board Exam. of Class XII	17	18
19	20	21	22	23	24 Culmination of Pre-Board Exam. of Class XII	25 Republic Day Celebrations Farewell to Class XII
26 Republic Day	27	28	29	30 Martyrs' Day	31 Parent Teacher Meeting	* subject to change as per Govt. instructions

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
February 2020 (Working days = 23)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 Commencement of Board Practicals of Class XII
2	3 Commencement of Annual Exam. of class IX & XI	4	5	6	7	8 Holiday for students on account of 2 nd Saturday
9	10	11	12	13	14 Culmination of Annual Exam. of class IX	15
16	17	18	19	20 Culmination of Annual Exam. of class XI	21 Holiday (Mahashivratri)	22
24	24	25	26	27	28 National Science Day	29 Parent Teacher Meeting

GOLAYA PROGRESSIVE PUBLIC SCHOOL, PALWAL						
ACADEMIC CALENDAR 2019-20						
March 2020 (Working days = 10)						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5 Commencement of Annual Examination for Class I - VIII	6	7
8 International Women's Day	9	10 Holiday (Holi)	11	12	13	14 Holiday for students on account of 2 nd Saturday
15	16	17	18 Culmination of Annual Examination	19	20	21
22 World Day for Water	23	24	25	26	27 Result Declaration	28
29	30	31				

TEST SCHEDULE

Periodic Test 1	Subject
10.05.2019 (Friday)	Chemistry
13.05.2019 (Monday)	Mathematics / Biology
14.05.2019 (Tuesday)	Physics
15.05.2019 (Wednesday)	Computer Science/ Physical Education
16.05.2019 (Thursday)	English

Half Yearly Exam.	Subject
06.09.2019 (Friday)	<i>Chemistry Practical</i>
07.09.2019 (Saturday)	<i>Physical Education Practical</i>
09.09.2019 (Monday)	Chemistry
11.09.2019 (Wednesday)	Computer Science/ Physical Education
12.09.2019 (Thursday)	English
13.09.2019 (Friday)	Physics
16.09.2019 (Monday)	Mathematics / Biology
18.09.2019 (Wednesday)	<i>Physics Practical</i>
19.09.2019 (Thursday)	<i>Computer Science Practical</i>
20.09.2019 (Friday)	<i>Biology Practical</i>

Pre-Board Examination	Subject
06.12.2019 (Friday)	Chemistry Practical
07.12.2019 (Saturday)	<i>Biology Practical</i>
09.12.2019 (Monday)	Chemistry
12.12.2019 (Thursday)	Physics
13.12.2019 (Friday)	Mathematics / Biology
16.12.2019 (Monday)	Computer Science / Physical Education
17.12.2019 (Tuesday)	English
18.12.2019 (Wednesday)	<i>Computer Science / Phy. Edu. Practical</i>
19.12.2019 (Thursday)	<i>Biology Practical</i>

Curriculum Plan of English Core
(Session: 2019-2020)

Month Topic	Theme/Audio Visual Inputs	Assignment /Discussion	Listening, Speaking, Reading and Writing Skills	Core Skills/Art Integration/ Interdisciplinary Linkages
April Topic: The Last Lesson No. of Periods: 06	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on The Last Lesson • Discussion of Scoring Points/ Marking Scheme/Sample Questions 	Short review/ dramatization of the story	Patriotism, freedom of language and the love for one's mother tongue
Topic: My Mother at Sixty Six No. of Periods: 05	Poetic Appreciation, Rhyme Scheme Poetic Devices Central Idea	<ul style="list-style-type: none"> • Assignment on My Mother at Sixty Six • Discussion of Scoring Points/ Marking Scheme/Sample Questions 	Critical evaluation of the theme conveyed by the poet	Eternal law of ageing & complex subtleties of human relationship.
Topic: The Tiger King No. of Periods: 06	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on The Tiger King • Discussion of Scoring Points/ Marking Scheme/Sample Questions 	Extrapolating the story read or life of characters after the story ends/ defending the characters' actions in the story	Transience of life & power.
Topic: Writing Section No. of Periods: 06	Notice Writing, Advertisement	<ul style="list-style-type: none"> • Assignment on Notice & Advertisement • Discussion of Scoring Points/ Marking Scheme/Sample Questions 	Write notices for school events/processes to develop writing skills.	Freedom of expression & clarity of thoughts.
May	Periodic Test - 1			
Topic: Lost Spring No. of Periods: 06	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on Lost Spring • Discussion of Scoring Points/ Marking Scheme/Sample Questions 	Comparing and contrasting the characters within the story and with other characters in stories by the same author or by the other authors	Child exploitation through child labour. Power of optimism & hope.

Month Topic	Theme/Audio Visual Inputs	Assignment /Discussion	Listening, Speaking, Reading and Writing Skills	Core Skills/Art Integration/ Interdisciplinary Linkages
Topic: An Elementary School Classroom in a Slum No. of Periods: 05	Poetic Appreciation Rhyme Scheme Poetic Devices Central Idea	<ul style="list-style-type: none"> • Assignment on An Elementary School Classroom in Slum • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Commentary on the central idea conveyed through the poem	Poverty, Social injustice & Social inequality.
Topic: Deep Water No. of Periods: 06	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on Deep Water • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Silent reading of prescribed/selected texts for comprehension	Power of determination to overcome any adversity.
Topic: Writing Section No. of Periods: 05	Letter Writing (Formal)	<ul style="list-style-type: none"> • Assignment on Letter Writing • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Write on various issues to institutions seeking relevant information, lodge complaints, express thanks or tender apology	Freedom of expression & clarity of thoughts.
July Topic: The Rattrap No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on The Rattrap • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Language learning activities such as role-play, dramatization, group discussion, writing, etc.	Importance of human companionship & community.
Topic: Keeping Quiet No. of Periods: 05	Poetic Appreciation Rhyme Scheme Poetic Devices Central Idea	<ul style="list-style-type: none"> • Assignment on Keeping Quiet • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Silent reading of prescribed/selected texts for comprehension	Peace, humanity and self-actualization. Power of introspection.
Topic: Indigo No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on Indigo • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Encouraging students to role-play as various characters to interact with one another	Leadership & Social justice.

Month Topic	Theme/Audio Visual Inputs	Assignment /Discussion	Listening, Speaking, Reading and Writing Skills	Core Skills/Art Integration/ Interdisciplinary Linkages
Topic: The Third Level No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on The Third Level • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Short review/ dramatization of the story	Time Travel & Escapism
Topic: Writing Section No. of Periods: 04	Article Writing, Report Writing	<ul style="list-style-type: none"> • Assignment on Articles & Reports • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Express opinions, facts & arguments	Freedom of speech & clarity of thoughts.
August Topic: Poets & Pancakes No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on Poets & Pancakes • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Critical evaluation of the plot, storyline and characters	Knowledge about cosmetics & film industry.
Topic: A Thing of Beauty No. of Periods: 05	Poetic Appreciation Rhyme Scheme Poetic Devices Central Idea	<ul style="list-style-type: none"> • Assignment on A Thing of Beauty • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Appreciating the idea conveyed through the poem.	Beauty and its different forms. Worldly attachment & its consequences.
Topic: The Interview No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on The Interview • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Group and pair activities like group discussion etc.	Different career skills.
Topic: Journey to the end of the Earth No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on Journey to the end of the Earth • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Commentary on the characters.	Geological history of the world.
Topic: Writing Section No. of Periods: 04	Speech, Debate	<ul style="list-style-type: none"> • Assignment on Speech & Debate • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Express opinions, facts, arguments in the form a speech or debates	Freedom of expression & clarity of thoughts.
September	Half Yearly Examination and ASL			

Month Topic	Theme/Audio Visual Inputs	Assignment /Discussion	Listening, Speaking, Reading and Writing Skills	Core Skills/Art Integration/ Interdisciplinary Linkages
October Topic: Going Places No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on Going Places • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Role playing as authors/ poets/ dramatists to defend their works and characters	Fantasies of adolescence versus Reality of life.
Topic: A Roadside Stand No. of Periods: 05	Poetic Appreciation Rhyme Scheme Poetic Devices Central Idea	<ul style="list-style-type: none"> • Assignment on A Roadside Stand • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Discussion of the theme conveyed by the poet	Social inequality.
Topic: Should Wizard Hit Mommy No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on Should Wizard Hit Mommy • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Commentary on the characters	Issues of parenting. Perspective of an adult.
Topic: On the face of it No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on On the face of it • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Dramatizing incidents from the story	Problems associated with the physical disability.
Topic: Writing Section No. of Periods: 04	Application Writing, Invitation	<ul style="list-style-type: none"> • Assignment on Application & Invitation • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Write applications, fill in application forms, prepare a personal bio-data for admission into colleges, universities, entrance tests and jobs	Freedom of expression & clarity of thoughts.
November Topic: Evans Tries an O-Level No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on Evans Tries an O-Level • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Short review/ dramatization of the story	Life in a prison.

Month Topic	Theme/Audio Visual Inputs	Assignment /Discussion	Listening, Speaking, Reading and Writing Skills	Core Skills/Art Integration/ Interdisciplinary Linkages
Topic: Aunt Jennifer's Tigers No. of Periods: 05	Poetic Appreciation Rhyme Scheme Poetic Devices Central Idea	<ul style="list-style-type: none"> • Assignment on Aunt Jennifer's Tigers • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Extrapolating the theme conveyed by the poet	Male chauvinism. Women empowerment.
Topic: Memories of Childhood No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on: Memories of Childhood • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Making an audio story out of the text to be read aloud	Racial discrimination & caste discrimination.
Topic: The Enemy No. of Periods: 05	Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters	<ul style="list-style-type: none"> • Assignment on: The Enemy • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Critical evaluation of the plot, storyline and characters	Ethics of medical profession. Power of peace, love & humanism.
Topic: Writing Section No. of Periods: 04	Poster Making	<ul style="list-style-type: none"> • Assignment on: Poster Making • Discussion of Scoring Points/Marking Scheme/Sample Questions 	Develop writing skills & creativity in students.	Freedom of expression & clarity of thoughts.
December	Pre-Board Examination			
January	Revision			
February	Revision			
March	Annual Examination			

EXAMINATION SYLLABUS

Sr. No.	Examination	Syllabus		
		Flamingo	Vistas	Writing Skills
1	Periodic Test 1	<ul style="list-style-type: none"> Lesson 1 The Last Lesson Poem-1 My Mother at Sixty Six 	<ul style="list-style-type: none"> Lesson 1 The Tiger King 	<ul style="list-style-type: none"> Notice Advertisement
2	Half Yearly Examination	<ul style="list-style-type: none"> Lesson 1 The Last Lesson Lesson 2 Lost Spring Lesson 3 Deep Water Lesson 4 The Rattrap Lesson 5 Indigo Lesson 6 Poets & Pancakes Lesson 7 The Interview Poem-1 My Mother at Sixty Six Poem-2 An Elementary School Classroom in a Slum Poem-3 Keeping Quiet Poem-4 A Thing of Beauty 	<ul style="list-style-type: none"> Lesson 1 The Tiger King Lesson 2 The Enemy Lesson 3 Should Wizard Hit Mommy? Lesson 4 Third Level Lesson 5 Journey to the end of the Earth 	<ul style="list-style-type: none"> Letter Article Report Writing Speech Debate
3	Pre Board Examination	Full Syllabus		

NOTE: There will be a class test and an assignment after every lesson.

Curriculum Plan of Physics Session (2019-20)

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
April Topic: Electric Charges and Fields No. of periods: 10	Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).	Video • Gauss law and Gaussian surface	Interdisciplinary Linkage: Maths Diagrams: 1.6, 1.8, 1.11, 1.17, 1.18, 1.20, 1.29, 1.30, 1.31 N.C.E.R.T Part 1 Art Integration: Draw diagrams of electric field at axial and equatorial point and applications of Gauss's theorem.		<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Electric Charges and Fields • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Electrostatic Potential and Capacitance No. of periods: 12	Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field. Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate	Videos • Capacitors • Dielectric and its effect on capacitance	Interdisciplinary Linkage: Maths Diagrams: 2.4, 2.5, 2.11, 2.16, 2.18, 2.25, 2.30 Art Integration: Draw graph of V and E with the variation of r and diagrams of equipotential surfaces, capacitor with dielectrics and conductor	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ To determine resistance per cm of a given wire by plotting a graph of potential difference versus current 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Electrostatic Potential and Capacitance • Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
	capacitor with and without dielectric medium between the plates, energy stored in a capacitor.				
Topic: Current Electricity No. of periods: 20	Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's laws and simple applications, Wheatstone bridge, metre bridge. Potentiometer - principle and its applications to measure potential difference and for comparing EMF of two cells; measurement of internal resistance of a cell.	Video <ul style="list-style-type: none"> • Wheatstone bridge • Metre bridge • Potentiometer 	Interdisciplinary Linkage: Maths Diagrams: 3.9, 3.10, 3.11, 3.21, 3.27, 3.28 Art Integration: Draw diagrams of Kirchhoff's rule, metre bridge and potentiometer	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ To find resistance of a given wire using metre bridge and hence determine the resistivity (specific resistance) of its material. ○ To verify the laws of combination (series/parallel) of resistances using a metre bridge. ○ To compare the EMF of two given primary cells using potentiometer. ○ To determine the internal resistance of given primary cell using potentiometer 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Current Electricity • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Moving Charges and Magnetism No. of periods: 12	Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire. Straight and toroidal solenoids (only qualitative treatment), force on a moving charge in		Interdisciplinary Linkage: Maths Diagrams: 4.2, 4.5, 4.6, 4.8, 4.11, 4.17, 4.18, 4.21, 4.24, 4.25, 4.26	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Moving Charges and Magnetism

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
	uniform magnetic and electric fields, Cyclotron. Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.	Video <ul style="list-style-type: none"> Cyclotron, Moving coil galvanometer 	Art Integration: Draw diagram of cyclotron, moving coil galvanometer	Practical <ul style="list-style-type: none"> To determine resistance of a galvanometer by half-deflection method and to find its figure of merit. To convert the given galvanometer (of known resistance and figure of merit) into an ammeter and voltmeter of desired range and to verify the same. To find the frequency of AC mains with a sonometer. 	<ul style="list-style-type: none"> Discussion of Scoring Points/ Marking Scheme/ Sample Questions
May Topic: Magnetism and Matter No. of periods: 10	Periodic Test - 1				
	Current loop as a magnetic dipole and its magnetic dipole moment, magnetic dipole moment of a revolving electron, magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis, torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; earth's magnetic field and magnetic elements. Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths, permanent magnets.	Video <ul style="list-style-type: none"> Earth's magnetism 	Interdisciplinary Linkage: Maths Diagrams: 5.4, 5.7, 5.13, 5.14 Art Integration: Draw diagram of earth's magnetism and graph showing variation of B and H		<ul style="list-style-type: none"> Assignment <ul style="list-style-type: none"> Magnetism and Matter Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
July Topic: Electro-magnetic Induction No. of periods: 10	Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Eddy currents. Self and mutual induction.	Video • Eddy Current	Interdisciplinary Linkage: Maths Diagrams: 6.1, 6.2, 6.10, 6.13, 6.15, 6.16, 6.17 Art Integration: Draw diagram of self induction and mutual induction		<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Electro-magnetic Induction • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Alternating Current No. of periods: 10	Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, power factor, wattless current. AC generator and transformer.	Video • LC Oscillations, Transformers.	Interdisciplinary Linkage: Maths Diagrams: 7.4, 7.15, 7.16, 7.20 Art Integration: Draw phasor diagram of LCR circuit, graph of resonant fre., and AC generator		<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Alternating Current • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Electro-magnetic Waves No. of periods: 04	Basic idea of displacement current, Electromagnetic waves, their characteristics, their Transverse nature (qualitative ideas only). Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.	Video • Electromagnetic waves and characteristics, Electromagnetic spectrum.	Interdisciplinary Linkage: Maths Diagrams: 8.1, 8.4, 8.5		<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Electro-magnetic Waves • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
August Topic: Ray Optics and Optical Instruments No. of periods: 13	Ray Optics: Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and its applications, optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula, magnification, power of a lens, combination of thin lenses in	Video • Dispersion and Scattering, Microscope, Telescope.	Interdisciplinary Linkage: Maths Diagrams: 9.5, 9.10, 9.12, 9.17, 9.30, 9.31, 9.32 N.C.E.R.T part 11	Practical <ul style="list-style-type: none"> • To find the value of v for different values of u in case of a concave mirror and to find the focal length. • To find the focal length of a convex mirror, 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Ray Optics and Optical Instruments • Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
	contact, refraction of light through a prism. Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset. Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.		Art Integration: Derive derivations and diagram of TIR, refraction spherical surfaces, lense maker formula. Diagrams of all optical instruments	using a convex lens. <ul style="list-style-type: none"> To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$. To find the focal length of a concave lens, using a convex lens. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation. 	
Topic: Wave Optics No. of periods: 12	Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light, diffraction due to a single slit, width of central maximum, resolving power of microscope and astronomical telescope, polarisation, plane polarised light, Brewster's law, uses of plane polarised light and Polaroids.	Video <ul style="list-style-type: none"> Wavefronts, Interference, Diffraction, Polarization. 	Interdisciplinary Linkage: Maths Diagrams: 10.3, 10.4, 10.5, 10.20, 10.23 Art Integration Draw diagrams of reflection and refraction by wave theory interference, diffraction and polarisation	Investigatory Project <ul style="list-style-type: none"> Final Submission 	<ul style="list-style-type: none"> Assignment <ul style="list-style-type: none"> Wave Optics Discussion of Scoring Points/ Marking Scheme/ Sample Questions
September	Half Yearly Examination				

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
September Topic: Dual Nature of Radiation and Matter No. of periods: 08	Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light. Matter waves-wave nature of particles, de-Broglie relation, Davisson-Germer experiment (experimental details should be omitted; only conclusion should be explained).	Video • Photoelectric effect, Davison-Germer experiment	Interdisciplinary Linkage: Maths Diagrams: 11.1, 11.3, 11.5, 11.7 Art Integration: Draw and understand graph of effects of photoelectric effect		<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Dual Nature of Radiation and Matter • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
October Topic: Atoms No. of periods: 05	Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.	Video • Rutherford's model, Bohr model,	Interdisciplinary Linkage: Maths Diagrams: 12.2, 12.3, 12.8, 12.9 Art Integration: Draw diagram of energy levels of Bohr model		<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Atoms • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Nuclei No. of periods: 09	Composition and size of nucleus, Radioactivity, alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.	Video • Radioactivity	Interdisciplinary Linkage: Maths Diagrams: 13.1, 13.3, 13.5 Art Integration: Draw graph of binding energy curve		<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Nuclei • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
November Topic: Semi-conductor Electronics: Materials, Devices and Simple	Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier; Special purpose p-n junction diodes: LED, photodiode, solar cell and Zener diode and their characteristics, zener diode as a voltage regulator.	Video • LED, Photodiode, Solar cell, Zener diode.	Interdisciplinary Linkage: Maths Diagrams: 14.2, 14.4, 14.6, 14.10, 14.11, 14.12, 14.13, 14.16, 14.19, 14.21, 14.23, 14.28, 14.29, 14.31, 14.32, 14.36, 14.38, 14.40, 14.44	Practical <ul style="list-style-type: none"> • To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias. • To draw the characteristic curve 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Semi-conductor Electronics: Materials, Devices and Simple Circuits

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
Circuits No. of periods: 15			Art Integration: Draw graphs of characteristics of pn junction and diagrams of transistor and diodes Draw circuit diagrams of basic and combine logic gates	of a zener diode and to determine its reverse break down voltage. <ul style="list-style-type: none"> To study the characteristic of a common - emitter npn or pnp transistor and to find out the values of current and voltage gains. 	<ul style="list-style-type: none"> Discussion of Scoring Points/ Marking Scheme/ Sample Questions
December	Pre Board Examination				
January	Revision				
February	Revision				
March	Annual Examination				

EXAMINATION SYLLABUS

PERIODIC TEST 1:

Unit 1 & 2

HALF YEARLY EXAMINATION:

Units 1 to 5

PRE-BOARD EXAMINATION:

Full Syllabus (Units 1 to 9)

NOTE: There will be a class test and assignment after every chapter.

Curriculum Plan of Chemistry
(Session: 2019-2020)

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
April Topic: Solutions No. of periods: 10	Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties - relative lowering of vapour pressure, Raoult's law, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.	Videos to show colligative properties and abnormal molecular mass, Raoult's law.	Interdisciplinary Linkage: Maths Diagrams: Fig 2.1, 2.3, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11 (NCERT part 1) Art Integration: Drawing graphs on Raoult's law, deviation from Raoult's law, graphs of different on Colligative properties.	Practical: Determination of concentration/ molarity of KMnO_4 solution by titrating it against a standard solution of: <ul style="list-style-type: none"> • Oxalic acid, • Ferrous Ammonium Sulphate (Students will be required to prepare standard solutions by weighing themselves).	1. Assignment on Solutions 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Electro-chemistry No. of periods: 12	Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, fuel cells, corrosion.	Videos to show fuel cells, types of batteries, corrosion.	Interdisciplinary Linkage: Maths, Physics Diagrams: Fig 3.1, 3.2, 3.3, 3.6, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13 (NCERT part 1) Art Integration: Drawing graphs on variation of conductivity and molar conductivity with concentration for weak electrolyte and strong electrolyte.	Practical: (1) Thermochemistry Any one of the following experiments <ul style="list-style-type: none"> • Copper Sulphate or Potassium Nitrate. • Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH). • Determination of enthalpy change during interaction (Hydrogen bond formation) between Acetone and Chloroform. (2) Electrochemistry Variation of cell potential in $\text{Zn}/\text{Zn}^{2+} \text{Cu}^{2+}/\text{Cu}$ with change in concentration of electrolytes (CuSO_4 or ZnSO_4) at room temperature	1. Assignment on Electro-chemistry. 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
April Topic: Chemical Kinetics No. of periods: 10	Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment). Activation energy, Arrhenius equation.	Videos to show activation energy, collision theory and rate of reaction.	Interdisciplinary Linkage: Maths Diagrams: Fig 4.1,4.3, 4.4, 4.5, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12 (NCERT part 1) Art Integration: Drawing graphs on instantaneous and average rate of a reaction	Practical: (1) Chemical Kinetics (a) Effect of concentration and temperature on the rate of reaction between Sodium Thio sulphate and Hydrochloric acid. (b) Study of reaction rates of any one of the following: <ul style="list-style-type: none"> • Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of Iodide ions. • Reaction between Potassium Iodate (KIO₃) and Sodium Sulphite (Na₂SO₃) using starch solution as indicator (clock reaction). 	1. Assignment on Chemical kinetics. 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
May Topic: Surface Chemistry No. of periods: 08	PERIODIC TEST - 1				
	Adsorption - physisorption and chemisorption, factors affecting adsorption of gases on solids, catalysis, homogenous and heterogenous activity and selectivity; enzyme catalysis colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multi-molecular and macro-molecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation, emulsion - types of emulsions.	Videos to show Tyndall effect, Brownian movement, Homogeneous and heterogeneous catalysis, enzyme catalysis.	Interdisciplinary Linkage: Physical science. Diagrams: Fig 5.1, 5.2, 5.3, 5.4, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15. (NCERT part 1) Art Integration: Drawing graph on Adsorption isotherm and Freundlich Adsorption isotherm.	Practical: (1) Surface Chemistry <ul style="list-style-type: none"> • Preparation of one lyophilic and one lyophobic sol Lyophilic sol - starch, egg albumin and gum Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide. • Dialysis of sol-prepared in (a) above. • Study of the role of emulsifying agents in stabilizing the emulsion of different oils. Investigatory project: Topic Selection	1. Assignment on Surface Chemistry. 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
July Topic: General Principles and Processes of Isolation of Elements No. of periods: 08	Principles and methods of extraction - concentration, oxidation, reduction - electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron	Videos to show different methods of extraction	Interdisciplinary Linkage: Inorganic science. Diagrams: Fig 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, (NCERT part 1) Art Integration: Drawing graph on Adsorption isotherm and Freundlich Adsorption isotherm.	PRACTICAL: (1) Chromatography <ul style="list-style-type: none"> Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of R_f values. Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in R_f values to be provided). 	1. Assignment on General Principles and Processes of Isolation of Elements 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: 'p' block elements No. of periods: 14	Group 16 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties, dioxygen: Preparation, Properties and uses, classification of Oxides, Ozone, Sulphur - allotropic forms; compounds of Sulphur: Preparation Properties and uses of Sulphur-dioxide, Sulphuric Acid: industrial process of manufacture, properties and uses; Oxoacids of Sulphur (Structures only). Group 17 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens	Videos to show structures of oxoacids.	Diagrams: Fig 7.5, 7.6, 7.7, 7.8, 7.9 (NCERT part 1) Art Integration: Drawing structures of oxoacids and compounds of noble gases.	Revision of practical	1. Assignment on p - Block Elements 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
	Group 17 Elements: Preparation, properties and uses of Chlorine and Hydrochloric acid, interhalogen compounds, Oxoacids of halogens (structures only). Group 18 Elements: General introduction, electronic configuration, occurrence, trends in physical and chemical properties, uses.				
Topic: 'd' and 'f' Block Elements No. of periods: 12	General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first-row transition metals - metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$. Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences. Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids.	Video to show lanthanoid contraction and properties of $K_2Cr_2O_7$ and $KMnO_4$.	Diagrams/ Graphs: Fig 8.1, 8.2, 8.3, 8.4, 8.6, 8.7 (NCERT part 1) Art Integration: Drawing graph on different properties like atomic radii etc.	Revision of practical	1. Assignment on 'd' and 'f' Block Elements 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
August Topic: Coordination Compounds No. of periods: 12	Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative inclusion, extraction of metals and biological system).	Video to show stereoisomerism	Diagrams: Fig 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 9.13, 9.14 (NCERT part 1) Art Integration: Drawing structures of metal carbonyls, d orbital splitting in octahedral and tetrahedral crystal field.	Practical: (1) Preparation of inorganic compounds <ul style="list-style-type: none"> Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum. Preparation of Potassium Ferric Oxalate. 	1. Assignment on coordination compounds. 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
Topic: Haloalkanes and Haloarenes No. of periods: 12	Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation. Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). Uses and environmental effects of - dichloromethane, trichloro methane, tetrachloromethane, iodoform, freons, DDT	Videos to show retention, inversion and racemic mixtures.	Diagrams: Fig 10.2, 10.3, 10.4, 10.5 (NCERT part 2) Art Integration: Drawing structures to show retention, inversion and racemic mixtures.	PRACTICAL: (1) Preparation of Organic Compounds Preparation of any one of the following compounds <ul style="list-style-type: none"> • Acetanilide • Di-benzal Acetone • p-Nitro acetanilide • Aniline yellow or 2-Naphthol Aniline dye. 	1. Assignment on Haloalkanes and Haloarenes 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Alcohols, Phenols and Ethers No. of periods: 12	Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol. Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols. Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.	Video to show mechanism of dehydration in alcohols.	Art Integration: Drawing different resonating structures to explain the structure of phenol.	PRACTICAL: (1) Qualitative analysis Determination of one cation and one anion in a given salt. Cation - Pb^{2+} , Cu^{2+} , Al^{3+} , Fe^{3+} , Mn^{2+} , Zn^{2+} , Cu^{2+} , Co^{2+} , Ni^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , $[\text{NH}_4]^+$ Anions - $[\text{CO}_3]^{2-}$, S^{2-} , $[\text{SO}_3]^{2-}$, $[\text{SO}_4]^{2-}$, $[\text{NO}_2]^-$, Cl^- , Br^- , I^- , $[\text{PO}_4]^{3-}$, $[\text{C}_2\text{O}_4]^{2-}$, CH_3COO^- (Note: Insoluble salts excluded) PROJECT SUBMISSION	1. Assignment on Alcohols, Phenols and Ethers 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
September	Half Yearly Examination				

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
October Topic: Aldehydes, Ketones and Carboxylic Acids No. of periods: 14	Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, Mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses. Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.	Videos to show mechanism of addition and nucleophilic reactions	Art Integration: Writing mechanism of different reactions by showing arrows for transfer of electrons.	PRACTICAL: (1) Tests for the functional groups present in organic compounds: Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (Primary) groups.	1. Assignment on Aldehydes, Ketones and Carboxylic Acids 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
November Topic: Organic compounds containing Nitrogen No. of periods: 12	Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines. Cyanides and Isocyanides - will be mentioned at relevant places in text. Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.	Videos to show chemical properties of amines.	Art Integration: Drawing resonating structures to explain the acidity of amines.	Revision of practical	1. Assignment on Organic compounds containing Nitrogen 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Biomolecules No. of periods: 12	Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates. Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure. Vitamins - Classification and functions. Nucleic Acids: DNA and RNA.	Videos to show structure of carbohydrate, proteins and nucleic acids.	Art Integration: Drawing structures of carbohydrate, proteins and nucleic acids.	Practical: (1) Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given food stuffs.	1. Assignment on Biomolecules 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
Topic: Polymers No. of periods: 06	Copolymerization, some important polymers: natural and synthetic like polythene, nylon polyesters, Bakelite, rubber. Biodegradable and nonbiodegradable polymers.	Videos to show different types of polymerization reactions.	Art Integration: Drawing structures of different monomers which form polymers.	Revision of practical	1. Assignment on Polymers 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Chemistry in Everyday life No. of periods: 06	Chemicals in medicines - analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines. Chemicals in food - preservatives, artificial sweetening agents, elementary idea of antioxidants. Cleansing agents- soaps and detergents, cleansing action.	Videos to show cleansing action of soaps.	Art Integration: Drawing lock and key mechanism of enzyme and substrate, cleansing action of soap.	Revision of practical	1. Assignment on Chemistry in Everyday life 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
December	Pre Board Examination				
January	Revision				
February	Revision				
March	Annual Examination				

EXAMINATION SYLLABUS



Periodic Test 1:

Units 1 - 3

Half Yearly Examination:

Units 1 - 9

Pre-Board Examination

Full Syllabus (Units 1 - 14)

NOTE: There will be a class test and assignment after every chapter.

Curriculum Plan of Mathematics
(Session: 2019-2020)

Month Topic	Sub Topic	Concept/ Mathematics Activities	Discussion	Assignment
April Topic: Inverse Trigonometric Functions No. of Periods: 15	Definition, range, domain, principal value branch. Graphs of inverse trigonometric Functions Elementary properties of inverse trigonometric functions.	<ul style="list-style-type: none"> To draw the graph of $\sin^{-1}x$, using the graph of $\sin x$ and demonstrate the concept of mirror reflection (about the line $y = x$) To explore the principal value of the function $\sin^{-1}x$ using a unit circle. 	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Inverse Trigonometric Functions
Topic: Matrices No. of Periods: 25	Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Algebra of Matrices
Topic: Determinants No. of Periods: 25	Determinant of a square matrix (up to 3 x 3 matrices), properties of determinants, minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Determinants (especially operation based and system of equations)

Month Topic	Sub Topic	Concept/ Mathematics Activities	Discussion	Assignment
May Topic: Continuity and Differentiability No. of Periods: 20	Continuity and differentiability, derivative of composite functions, chain rule, derivative of inverse trigonometric functions, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretation.	<ul style="list-style-type: none"> To find analytically the limit of a function $f(x)$ at $x = c$ and also to check the continuity of the function at that point. 	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Continuity, differentiability and Derivatives of various functions
Topic: Applications of Derivatives No. of Periods: 10	Applications of derivatives: rate of change of bodies, increasing/decreasing functions, tangents and normal use of derivatives in approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).	<ul style="list-style-type: none"> To verify Rolle's Theorem & Lagrange's Theorem To understand the concepts of decreasing and increasing functions 	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Applications of derivatives (especially increasing-decreasing functions & maxima-minima concept)
July Topic: Integrals No. of Periods: 20	<p>Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.</p> $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$ $\int \frac{px + q}{ax^2 + bx + c} dx, \int \frac{px + q}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2} dx, \int \sqrt{x^2 - a^2} dx$ $\int \sqrt{ax^2 + bx + c} dx, \int (px + q)\sqrt{ax^2 + bx + c} dx$ <p>Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.</p>	<ul style="list-style-type: none"> To evaluate the definite integral $\int_a^b \sqrt{(1-x^2)} dx$ as the sum and verify it by actual integration. 	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Definite & Indefinite integrals

Month Topic	Sub Topic	Concept/ Mathematics Activities	Discussion	Assignment
Topic: Applications of the Integrals No. of Periods: 15	Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only), Area between any of the two above said curves (the region should be clearly identifiable).		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Areas bounded by the curves (including all type of equations)
August Topic: Differential Equations No. of Periods: 15	Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type: $\frac{dy}{dx} + py = q, \text{ where } p \text{ and } q \text{ are functions of } x \text{ or constants.}$ $\frac{dx}{dy} + px = q, \text{ where } p \text{ and } q \text{ are functions of } y \text{ or constants.}$		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Differential equations (especially homogeneous equations & linear differential equations)
Topic: Vectors No. of Periods: 15	Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors, scalar triple product of vectors.	<ul style="list-style-type: none"> To verify geometrically that $\vec{c} \times (\vec{a} + \vec{b}) = \vec{c} \times \vec{a} + \vec{c} \times \vec{b}$ 	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Dot product, cross product and triple product of vectors
September	Half Yearly Examination			

Month Topic	Sub Topic	Concept/ Mathematics Activities	Discussion	Assignment
October Topic: Three - dimensional Geometry No. of Periods: 15	Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes, (iii) a line and a plane. Distance of a point from a plane.	<ul style="list-style-type: none"> To demonstrate the equation of a plane in normal form. To measure the shortest distance between two skew lines and verify it analytically. 	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on D.C.'s & D.R.'s of line, co planarity, Cartesian & vector equations, shortest distance between lines and study of plane.
Topic: Linear Programming No. of Periods: 20	Introduction, related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Formulation of L.P.P., feasible & infeasible solutions
November Topic: Probability No. of Periods: 30	Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean and variance of random variable.	<ul style="list-style-type: none"> To explain the computation of conditional probability of a given event A, when event B has already occurred through an example of throwing a pair of dice. 	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on conditional probability, Bayes' Theorem, random variable, probability distribution, mean and variance of random variable.
Topic: Relations and Functions No. of Periods: 15	Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and on to functions, composite functions, inverse of a function.	<ul style="list-style-type: none"> To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m): llm\}$ is an equivalence relation. To demonstrate a function which is one-one but not onto. 	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on type of Relations, inverse of function, binary operation, one-one, many one, onto functions.
December	Pre Board Examination			

EXAMINATION SYLLABUS

Periodic Test - 1

- Inverse Trigonometric Functions
- Matrices
- Determinants

Half Yearly Examination

- Inverse Trigonometric Functions
- Matrices
- Determinants
- Continuity and Differentiability
- Applications of Derivatives
- Integrals
- Applications of Integrals
- Differential Equations
- Vectors

Pre Board Examination

Full Syllabus

NOTE: There will be a class test after every chapter.

Curriculum Plan of Biology
(Session: 2019-2020)

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
<p>April Topic: Reproduction in Organisms No. of Periods: 05</p> <p>Topic: Sexual Reproduction in Flowering Plants No. of Periods: 10</p>	<p>Reproduction, a characteristic feature of all organisms for continuation of species; modes of reproduction - asexual and sexual reproduction; asexual reproduction - binary fission, sporulation, budding, gemmule formation, fragmentation; vegetative propagation in plants.</p> <p>Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; outbreeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.</p>	<p>a. Modes of reproduction - asexual and sexual reproduction</p> <p>b. Events in sexual reproduction</p> <p>Structure of flower Pollination, Fertilization in plants. Pollen-pistil interaction;</p>	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 1.1 - Figure 1.8 ○ Figure 2.1 - Figure 2.15 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Study pollen germination on a slide. ○ Flowers adapted to pollination by different agencies (wind, insects, and birds). ○ Pollen germination on stigma through a permanent slide. ○ Controlled pollination - emasculation, tagging and bagging. • Investigatory Project <ul style="list-style-type: none"> ○ Selection of the topic ○ Planning of the project ○ Experimentation for the project 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Reproduction in Organisms ○ Flower - A fascinating organ- Pollination ○ Pollen Pistil interaction- Apomixis • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
<p>May Topic: Human Reproduction</p>	<p>Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis - spermatogenesis and oogenesis; menstrual cycle; fertilisation,</p>	<p>Male and female reproductive systems; Spermatogenesis, oogenesis; menstrual cycle</p>	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 3.1- Figure 3.12 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice). 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Male Reproductive system – oogenesis

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
No. of Periods: 10	embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).		Meiosis in onion bud cell or grasshopper testis through permanent slides.	<ul style="list-style-type: none"> Practical <ul style="list-style-type: none"> T.S. of blastula through permanent slides (Mammalian). Meiosis in onion bud cell or grasshopper testis through permanent slides. 	<ul style="list-style-type: none"> Assignment <ul style="list-style-type: none"> Menstrual cycle- Lactation Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Reproductive Health No. of Periods: 05	Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control - need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary idea for general awareness).	Methods of contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIF	<ul style="list-style-type: none"> Concept Map <ul style="list-style-type: none"> Figure 4.1- Figure 4.4 	<ul style="list-style-type: none"> Investigatory Project <ul style="list-style-type: none"> Discussion of how to write a project/ investigatory experiment 	<ul style="list-style-type: none"> Assignment <ul style="list-style-type: none"> Reproductive Health Discussion of Scoring Points/ Marking Scheme/ Sample Questions
July Topic: Principles of Inheritance and Variation No. of Periods: 15	Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co- dominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes; Sex determination - 9 in humans, birds and honey bee; linkage and crossing over; sex linked inheritance - haemophilia,	Incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy; chromosome theory of inheritance; chromosomes and genes; Sex determination	<ul style="list-style-type: none"> Concept Map <ul style="list-style-type: none"> Figure 5.1- Figure 5.17 	<ul style="list-style-type: none"> Practical <ul style="list-style-type: none"> Mendelian inheritance using seeds of different colour/sizes of any plant. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour blindness 	<ul style="list-style-type: none"> Assignment <ul style="list-style-type: none"> Mendelian inheritance – polygenic inheritance Chromosomal theory of inheritance – Chromosomal disorder

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
	colour blindness; Mendelian disorders in humans -thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.				<ul style="list-style-type: none"> • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Molecular Basis of Inheritance No. of Periods: 15	Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; transcription, genetic code, translation; gene expression and regulation - lac operon; genome and human and rice genome projects; DNA fingerprinting.	Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; transcription, genetic code, translation; gene expression and regulation - lac operon; genome and human and rice genome projects; DNA fingerprinting	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 6.1- Figure 6.16 	<ul style="list-style-type: none"> • Investigatory Project <ul style="list-style-type: none"> ○ First draft 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ The DNA-Properties of genetic material ○ RNA world- Adapter molecule ○ Translation – DNA fingerprinting • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Evolution No. of Periods: 10	Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; adaptive radiation; human evolution.	Origin of life; mutation and recombination) and natural selection Gene flow and genetic drift, Hardy - Weinberg's principle, adaptive radiation, human evolution.	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 7.1- Figure 7.11 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Study of homologous and analogous organs with the help of charts 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Origin of life-Adaptive Radiation ○ Biological evolution – Human Evolution • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Human Health and disease	Pathogens; parasites causing human diseases (malaria, dengue, chickengunia, filariasis, ascariasis, typhoid, pneumonia, common cold,	Basic concepts of immunology – vaccines, cancer, HIV and AIDS, Adolescence, drug and alcohol abuse.	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 8.1- Figure 8.11 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Common disease causing or 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Common diseases in humans –immune system in the body

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
No. of Periods: 15	amoebiasis, ring worm) and their control; Basic concepts of immunology - vaccines; cancer, HIV and AIDS; Adolescence - drug and alcohol abuse.			organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides or specimens. Comment on symptoms of diseases that they cause	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ AIDS—Alcohol Abuse • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
August Topic: Strategies for Enhancement in Food Production No. of Periods: 10	Improvement in food production: Plant breeding, tissue culture, single cell protein, Biofortification, Apiculture and Animal husbandry.	Plant breeding, tissue culture, single cell protein, Biofortification, Apiculture and Animal husbandry.	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 9.1- Figure 9.13 	<ul style="list-style-type: none"> • Investigatory Project <ul style="list-style-type: none"> ○ Second draft 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Animal husbandry – fisheries ○ Plant breeding—Tissue culture • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Microbes in Human Welfare No. of Periods: 05	In household food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use	Sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics;	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 10.1- Figure 10.8 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Microbes in Human Welfare • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Principles and Processes of Biotechnology No. of Periods: 15	Genetic Engineering (Recombinant DNA Technology).	Recombinant DNA Technology	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 11.1- Figure 11.7 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Study the effect of different temperatures and three different pH on the activity of salivary amylase on starch. ○ Prepare a temporary mount of onion root tip to study mitosis. 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Principles and Processes of Biotechnology • Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
September	Half Yearly Examination				
Topic: Biotechnology and Its Applications No. of Periods: 15	Application of biotechnology in health and agriculture, Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organisms – BT crops, transgenic animals; Biosafety issues, bio piracy and patents.	Gene therapy; genetically modified organisms – BT crops, transgenic animals	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 12.1- Figure 12.3 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc. • Investigatory Project <ul style="list-style-type: none"> ○ Final Draft 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Biotechnology and Its Applications • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
October Topic: Organisms and Population No. of Periods: 07	Habitat and niche, population and ecological adaptations; population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution.	Population interactions	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 13.1- Figure 13.6 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Study the plant population density by quadrat method. ○ Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity. ○ Correlate with the kinds of plants found in them. 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Organisms and its environment – Life history variation ○ Population interactions • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Ecosystems No. of Periods: 07	Patterns, components; productivity and decomposition; energy flow, pyramids of number, biomass, energy, nutrient cycles (carbon and phosphorous), ecological succession, ecological services - carbon fixation, pollination, seed dispersal, oxygen release.	Pyramids of number, biomass, energy, nutrient cycles (carbon and phosphorous), ecological succession, ecological services - carbon fixation, pollination	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 14.1- Figure 14.7 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Two plants and two animals (models/virtual images) found in xeric conditions. Comment upon their morphological adaptations. 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Ecosystem structure and function- Energy flow ○ Ecological pyramids— Ecosystem services • Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
November Topic: Biodiversity and its Conservation No. of Periods: 08	Concept of biodiversity; patterns of biodiversity; importance of biodiversity, loss of biodiversity, biodiversity conservation, hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, national parks and sanctuaries.	Concept, patterns, importance, loss, conservation of biodiversity; hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, national parks and sanctuaries.	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 15.1- Figure 15.2 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Two plants and two animals (models / virtual images) found in aquatic conditions. Comment upon their morphological adaptations. 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Biodiversity –loss of Biodiversity ○ Biodiversity conservation • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Environmental Issues No. of Periods: 08	Air pollution and its control, water pollution and its control, agrochemicals and their effects, solid waste management, radioactive waste management, greenhouse effect and global warming, ozone depletion, deforestation. Any three case studies as success stories addressing environmental issues, diseases; dengue and chickengunia.	Air, Water pollution and its control	<ul style="list-style-type: none"> • Concept Map <ul style="list-style-type: none"> ○ Figure 16.1- Figure 16.8 	<ul style="list-style-type: none"> • Practical <ul style="list-style-type: none"> ○ Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organism. ○ Study the presence of suspended particulate matter in air at two widely different sites. 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Air Pollution and its Control—Intergerated waste water treatment ○ Solid waste- Case study of people’s participation in conservation of forest • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
December	Pre Board Examination				
January	Revision				
February	Revision				
March	Annual Examination				

EXAMINATION SYLLABUS



Periodic Test - 1

Chapters 1 To 5

Half Yearly Examination

Chapters 1 To 11

Pre-Board Examination

Chapters 1 to 16

NOTE: There will be a class test and assignment after completion of every chapter.

Curriculum Plan of Computer Science
(Session: 2019-2020)

Month/Topic	Theory	Practical/Project	Miscellaneous
April No. of periods: 31 Topic: Review Topic: Object Oriented Programming Topic: Implementation of OOP concepts in C++	<ul style="list-style-type: none"> ➤ C++ covered in Class XI ➤ Concepts of OOP <ul style="list-style-type: none"> • Data hiding • Data encapsulation • Class and Object • Abstract class and Concrete class • Polymorphism (Implementation of polymorphism using Function overloading as an example in C++) • Inheritance ➤ Advantages of OOP over earlier programming methodologies ➤ Definition of a class ➤ Member of a class – Data Members and Member Functions (methods) ➤ Using Private and Public visibility modes, default visibility mode (private) 	<p style="text-align: center;">-</p> <p>Write a program to find area of following using function overloading.</p> <ul style="list-style-type: none"> • Area of circle (function with one parameter) • Area of rectangle (function with two parameters) • Area of triangle (function with three parameters) <p>1. Define a class worker with the following specification: <i>Private members of class worker:</i></p> <ul style="list-style-type: none"> • Wno, wname, hrwrk, wgrate, totwage • calcwg() A function to find hrwrk * wgrate <p><i>Public members of class worker:</i></p> <ul style="list-style-type: none"> • in_data() A function to accept values for wno, wname, hrwrk, wgrate and invoke calcwg (). • out_data() A function to display all the data members on the screen <p>2. Define a class Applicant with the following specification: <i>Private members:</i></p> <ul style="list-style-type: none"> • ANo, Name, Agg, Grade • A member function GradeMe() to find the Grades as per following criteria: 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ header files, error finding, output based questions from C++ covered in class XI ○ Concepts of OOP ○ Classes and Objects • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Art Integration: Draw diagram to show inheritance • Inter disciplinary linkage: Mathematics • Core Skills: Problem solving, Creative thinking, Interpersonal Relationship

Month/Topic	Theory	Practical/Project	Miscellaneous										
Topic: Implementation of OOP concepts in C++	<ul style="list-style-type: none"> ➤ Member function definition: inside class definition and outside class definition using scope resolution operator (::) ➤ Accessing members from object (s) ➤ Objects as function arguments–pass by value and pass by reference 	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Aggregate Marks</th> <th style="text-align: left;">Grade</th> </tr> </thead> <tbody> <tr> <td>≥ 80</td> <td>A</td> </tr> <tr> <td>Less than 80 and ≥ 65</td> <td>B</td> </tr> <tr> <td>Less than 65 and ≥ 50</td> <td>C</td> </tr> <tr> <td>Less than 50</td> <td>D</td> </tr> </tbody> </table> <p><i>Public members:</i></p> <ul style="list-style-type: none"> • ENTER () to allow user to enter values for ANo, Name , Agg and call GradeMe (). • RESULT () to allow user to view the content of all the data members. <p>3. Define a class HOTEL with the following specification:</p> <p><i>Private members:</i></p> <ul style="list-style-type: none"> • RNO, NAME, TARIFF, NOD • CALC () function to calculate and return Amount as $NOD * Tariff$ and if the value of $NOD * Tariff$ is more than 10000 then as $1.05 * NOD * Tariff$ <p><i>Public members:</i></p> <ul style="list-style-type: none"> • Check_in() function to enter the content Rno, Name, Tariff and NOD • Check_out() function to display Rno, Name, Tariff, NOD and Amount (Amount to be displayed by calling function CALC (.)) <p>4. Define a class Student with the following specification:</p> <p><i>Private members:</i></p> <ul style="list-style-type: none"> • roll_no, name, Class, marks (an array of size 4), percentage • Calculate () function that calculates overall percentage and <p><i>Public members:</i></p> <ul style="list-style-type: none"> • Read() to accept marks and invoke Calculate() • Display () function to print the data values <p>5. Define a class myfolder with the following specification:</p> <p><i>Private members:</i></p> <ul style="list-style-type: none"> • Filenames - an array of strings of size [10][25] (to represent all the names of files under myfolder) • Availspace - long (total number of bytes available) 	Aggregate Marks	Grade	≥ 80	A	Less than 80 and ≥ 65	B	Less than 65 and ≥ 50	C	Less than 50	D	<ul style="list-style-type: none"> • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Art Integration: Draw diagram to show inheritance • Inter disciplinary linkage: Mathematics • Core Skills: Problem solving, Creative thinking, Interpersonal Relationship
Aggregate Marks	Grade												
≥ 80	A												
Less than 80 and ≥ 65	B												
Less than 65 and ≥ 50	C												
Less than 50	D												

Month/Topic	Theory	Practical/Project	Miscellaneous																
		<ul style="list-style-type: none"> • Usedspace - long (total number of bytes used) <p><i>Public members:</i></p> <ul style="list-style-type: none"> • Newfileentry() - A function to accept values for Filename, Availspace and Usedspace from user • Retavailspace() - A function that returns the value of total Kilobytes available(1 Kilobyte = 1024 bytes) • Showfiles() - A function that displays the names of all the files 																	
<p>Topic: Constructor and Destructor</p>	<p>➤ Constructor</p> <ul style="list-style-type: none"> • Special characteristics • Declaration and definition of a constructor • Default constructor • Overloaded constructors • Copy constructor • Constructor with default arguments 	<p>1. Define a class TravelPlan:</p> <p><i>Private members:</i> PlanCode, Place, Number_of_travellers, Number_of_buses</p> <p><i>Public members:</i></p> <ul style="list-style-type: none"> • A constructor to assign initial values of PlanCode as 1001, Place as “Agra”, Number_of_travellers as 5, Number_of_buses as 1 • A function NewPlan() which allows user to enter PlanCode, Place and Number_of_travellers. Also, assign the value of Number_of_buses as follows: <table border="0" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;">Number_of_travellers</th> <th style="text-align: left;">Number_of_buses</th> </tr> </thead> <tbody> <tr> <td>Less than 20</td> <td>1</td> </tr> <tr> <td>Equal to or more than 20 and less than 40</td> <td>2</td> </tr> <tr> <td>Equal to 40 or more than 40</td> <td>3</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • A function Showplan() to display the content of all the data <p>2. Create the class SOCIETY with following information:</p> <p>Data members: society_name, house_no, no_of_members, flat, income</p> <p>Member functions:</p> <ul style="list-style-type: none"> • A constructor to assign initial values of society_name as "Surya Apartments", flat as "A Type", house_no as 20, no_of_members as 3, income as 25000. • Inputdata() - to read data members(society, house_no, no_of_members& income) and call allocate_flat(). • allocate_flat() - To allocate flat according to income <table border="0" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;">Income</th> <th style="text-align: left;">Flat</th> </tr> </thead> <tbody> <tr> <td>>=25000</td> <td>A Type</td> </tr> <tr> <td>>=20000 and <25000</td> <td>B Type</td> </tr> <tr> <td><15000</td> <td>C Type</td> </tr> </tbody> </table>	Number_of_travellers	Number_of_buses	Less than 20	1	Equal to or more than 20 and less than 40	2	Equal to 40 or more than 40	3	Income	Flat	>=25000	A Type	>=20000 and <25000	B Type	<15000	C Type	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Constructor and Destructor • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Inter disciplinary linkage: Mathematics • Core Skills: Problem solving, Creative thinking, Interpersonal Relationship
Number_of_travellers	Number_of_buses																		
Less than 20	1																		
Equal to or more than 20 and less than 40	2																		
Equal to 40 or more than 40	3																		
Income	Flat																		
>=25000	A Type																		
>=20000 and <25000	B Type																		
<15000	C Type																		

Month/Topic	Theory	Practical/Project	Miscellaneous								
Topic: Constructor and Destructor	<ul style="list-style-type: none"> ➤ Destructor <ul style="list-style-type: none"> • Special Characteristics • Declaration and definition of destructor 	<ul style="list-style-type: none"> • Showdata() - to display the details of the entire class. <p>3. Define a class Photo in C++ with following specifications: Private members: PNo, Category, Exhibit</p> <ul style="list-style-type: none"> • FixExhibit() to assign Exhibition Category as shown below: <table border="1" style="margin-left: 40px;"> <tr> <td>Category</td> <td>Exhibit</td> </tr> <tr> <td>Antique</td> <td>Zaveri</td> </tr> <tr> <td>Modern</td> <td>Johnsen</td> </tr> <tr> <td>Classic</td> <td>Terenida</td> </tr> </table> <p>Public Members:</p> <ul style="list-style-type: none"> • Register () to allow user to enter values Pno, Category and call FixExhibit() function • ViewAll() // A function to display all the data members 	Category	Exhibit	Antique	Zaveri	Modern	Johnsen	Classic	Terenida	<ul style="list-style-type: none"> • Project work <ul style="list-style-type: none"> ○ Converting structure into classes in the projects developed in class XI and define constructor
Category	Exhibit										
Antique	Zaveri										
Modern	Johnsen										
Classic	Terenida										
Topic: Inheritance	<ul style="list-style-type: none"> • Concept of Inheritance • Base Class • Derived classes • Visibility mode <ul style="list-style-type: none"> ○ Private ○ Protected ○ Public • Privately derived, publicly derived and protectedly derived class • accessibility of members from objects and within derived class (es) • Single level inheritance • Multilevel Inheritance 	<p>1. Define a class Shape with following specifications: Protected members: width integer, height integer Public members:</p> <ul style="list-style-type: none"> • Set_width() function to assign the data member width with the help of a parameter passed as an argument to the function. • Set_height() function to assign the data member height with the help of a parameter passed as an argument to the function. <p>Define a class Rectangle derived from class Shape publically with following specifications: Public members:</p> <ul style="list-style-type: none"> • getArea() function to return the area of rectangle by calculating width x height <p>2. Define a class person with following specifications: Data members: name, gender, age Public members:</p> <ul style="list-style-type: none"> • getdata() function to accept values of data members from the user <p>Define a class employee derived from class person with following specifications: Data members: company - string, salary – float</p> <ul style="list-style-type: none"> • display() function to display the data members on the screen 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Theory based questions on Single Inheritance ○ Programming on single inheritance • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Art Integration Draw diagrams to show different types of inheritance • Core Skills: Problem solving, Creative thinking, Interpersonal Relationship 								

Month/Topic	Theory	Practical/Project	Miscellaneous
Topic: Inheritance	<ul style="list-style-type: none"> Multilevel Inheritance (contd.) 	<p>Public members:</p> <ul style="list-style-type: none"> getdata() function to accept data members from the user display() function to display data members on the screen <p>Define a class programmer derived from class employee with following specifications:</p> <p>Data members:</p> <p>no_lang integer</p> <p>Public members:</p> <ul style="list-style-type: none"> getdata() function to accept data members from the user display() function to display data members on the screen 	<ul style="list-style-type: none"> Assignment <ul style="list-style-type: none"> Theory based questions on Multiple Inheritance Theory based questions on Multilevel Inheritance Programming on multiple and multilevel inheritance Discussion of Scoring Points/ Marking Scheme/ Sample Questions Art Integration: Draw diagrams to show different types of inheritance Core Skills: Problem solving, Creative thinking, Interpersonal Relationship
	<ul style="list-style-type: none"> Multiple Inheritance 	<p>3. Define a class person with following specifications:</p> <p>Data members: Name, address</p> <p>Public members:</p> <ul style="list-style-type: none"> getdata() function to accept the values of data members from the user display() function to display the values of data members on the screen <p>Define a class deptt derived from class person with following specifications:</p> <p>Data members: Deptt_Id, deptt_name, Work_assigned, days_complete</p> <p>Public members:</p> <ul style="list-style-type: none"> getdata() function to accept the values of data members from the user display() function to display the values of data members on the screen <p>Define a class employee derived from class person and deptt with following specifications:</p> <p>Data members: emp_Id, salary</p> <p>Public members:</p> <ul style="list-style-type: none"> getdata() function to accept data members from the user display() function to display the values of data members 	

Month/Topic	Theory	Practical/Project	Miscellaneous
Topic: Pointers	<ul style="list-style-type: none"> • Introduction to Pointer • Declaration and Initialization of Pointer • Dynamic memory allocation/ deallocation operators: new, delete • Pointers and Arrays <ul style="list-style-type: none"> ○ Array of Pointers ○ Pointer to an array (1d array) • Function returning a pointer • Reference variables and use of alias • Function call by reference • Pointer to structure: De-reference/ Deference operator: *, -> • Self-referential structure 	<ol style="list-style-type: none"> 1. Write a function set_big() having two integer type arguments passed by reference. The function sets the bigger of the two to -1. Also, call this function from main() . 2. Write a function swap() having two integer type arguments passed by reference. The function swaps the two given arguments. Also, call this function from main() . 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Pointers (output based questions and programming) • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Art Integration Draw diagrams to show memory allocation in arrays
May No. of periods: 25 Topic: Data File Handling	<ul style="list-style-type: none"> • Need for a data file • Types of data files – Text file and Binary file • Text File: Basic file operations on text file <ul style="list-style-type: none"> ○ Creating/Writing text into file ○ Reading and Manipulation of text from an already existing text File (accessing character by character). 	<ol style="list-style-type: none"> 1. Write a function in C++ create_txt() to create a text file “book.txt” and write two sentences about yourself. 2. Write a function which initializes a string variable to the content “Time is a great healer” and output the string one character at a time to the disk file “OUT.TXT”. Include all the header files required. 3. Write a function in C++ read_txt() to read from a text file “book.txt” and show one character at a time on screen. 4. Write a function in C++ char_txt() to read from a text file “book.txt” and count number of characters in it. 5. Write a function in C++ digit_txt() to read from a text file “book.txt” and count number of digits in it. 6. Write a function in C++ count_txt() to read from a text file “book.txt” and count number of capital alphabets, small alphabets, digits and other characters in it. 7. Write a function in C++ text_size() that displays the size of a file in bytes. 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Text file (creation of text file and manipulation of a text file character by character) • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Core Skills: Problem solving, Creative thinking, Interpersonal Relationship

Month/Topic	Theory	Practical/Project	Miscellaneous
Topic: Data File Handling	<ul style="list-style-type: none"> • Text File: Basic file operations on text file <ul style="list-style-type: none"> ○ Manipulation of text File (character by character). 	<ol style="list-style-type: none"> 1. Write a function in C++ vowel_txt() to read from a text file “book.txt” and count number of vowels in it. 2. Write a function in C++ copy_txt() to read from a text file “book.txt” and write to a text file called “NEW.TXT”. 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Text file (manipulation of a text file line by line and word by word) ○ Binary File • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
	<ul style="list-style-type: none"> ○ Reading and Manipulation of text File (accessing line by line). 	<ol style="list-style-type: none"> 1. Write a function display line by line from a text file “book.txt”. 2. Write a function count number of lines from a text file “book.txt”. 3. Write a function count number of lines starting / not starting with ‘A’ from a text file “book.txt”. 	
	<ul style="list-style-type: none"> ○ Reading and Manipulation of text File (accessing word by word). 	<ol style="list-style-type: none"> 1. Write a function in C++ word_txt() to read from a text file “book.txt” and count number of times “is” appears (as an independent word) in it. 2. Write a function in C++ word_txt() to read from a text file “book.txt” and count number of words starting with ‘t’ in it. 3. Write a function in C++ to count and display the no of four letter words in the file “words.txt” 	
	<ul style="list-style-type: none"> • Binary File <ul style="list-style-type: none"> ○ Creation of file ○ Writing data into file ○ Searching for required data from file ○ Appending data to a file ○ Insertion of data in sorted file ○ Deletion of data from file ○ Modification of data in a file • Components of C++ to be used with file handling: <ul style="list-style-type: none"> ○ Header file: fstream.h; ifstream, ofstream, classes; • Opening a text file in—in, out, and app modes • Using cascading operators (>>,<<) for writing text to the file and reading text from the file 	<ol style="list-style-type: none"> 1. Assuming the class EMPLOYEE given below, write functions in C++ to perform the following: <ul style="list-style-type: none"> (i) Write the objects of class EMPLOYEE to a binary file at the bottom (ii) Read the objects of class EMPLOYEE from binary file and display them on screen <pre>class EMPLOYEE { int ENO; char ENAME [30] ; public: void GETIT () { cin>> ENO ; gets(ENAME) ; } void SHOWIT () { cout<< ENO <<“,” << ENAME ; } };</pre> <p>Write main() to display menu having the above mentioned choices and call the appropriate functions accordingly.</p> 2. Write a function to write record of a class 'student' to a binary file. 3. Write a function to read objects from a binary file and show on screen. 4. Write a function to read the objects of class 'student' from a binary file and show the records of students whose marks are between 50 and 75. 5. Write a function to modify the record of 'Akash' in a binary file. 6. Write a function to delete the record of 'Mohit' from a binary file. 	

Month/Topic	Theory	Practical/Project	Miscellaneous
July No. of periods: 39 Topic: Data File Handling	<ul style="list-style-type: none"> • open(), get (), read (), put (), write(), getline() and close() functions • Detecting end-of-file (with or without using eof() function), tellg(), tellp(), seekg(), seekp() 	Revision of Practical on the given topic. Project 1. Writing the object to binary file in append mode 2. Reading objects from binary file, searching for specific records and displaying the records on screen. 3. Updating specific records in a binary file. 4. Deleting the records from binary file.	<ul style="list-style-type: none"> • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Core Skills: Problem solving, Creative thinking, Empathy, Interpersonal Relationship
Topic: Arrays	<ul style="list-style-type: none"> • Introduction to data structure- array, stack queues primitive and non-primitive data structure, linear and non-linear structure, static and dynamic data structure. • One and two dimensional arrays • Sequential allocation and address calculation • One dimensional array <ul style="list-style-type: none"> ○ Traversal ○ Searching (Linear, Binary) ○ Insertion of an element in an array ○ Deletion of an element from an array ○ Sorting (Insertion, Selection, Bubble) 	5. Write a C++ program to perform linear search in a 1-D array. 6. Write a C++ program to perform binary search in a 1-D array. 7. Write a C++ program to arrange the numbers in ascending order using bubble sort 8. Write a C++ program to arrange the numbers in descending order using selection sort 9. Write a C++ program to arrange the numbers in ascending order using insertion sort 10. Write a C++ program to merge two sorted arrays in third one.	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Arrays (address calculation, binary search, sorting, merging) • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Art integration <ul style="list-style-type: none"> ○ Draw diagram to show memory allocation of one dimensional arrays • Inter disciplinary linkage: Mathematics • Core Skills: Problem solving, Creative thinking, Interpersonal Relationship
	<ul style="list-style-type: none"> • Two-dimensional arrays <ul style="list-style-type: none"> ○ Traversal ○ Finding sum/difference of two NxM arrays containing numeric values • Interchanging Row and Column elements in a two-dimensional array 	Write function in C++ to 1. add two 2-D arrays 2. multiply two 2-D arrays 3. insert an element in a sorted array 4. delete an element from an Array 5. find sum of diagonal elements in a 2-D array 6. find row/column sum of elements in a 2-D array.	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Programming in 2d Arrays • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Art integration <ul style="list-style-type: none"> ○ Diagram to show memory allocation of 2D arrays

Month/Topic	Theory	Practical/Project	Miscellaneous																								
August No. of periods: 37 Topic: Stack	<ul style="list-style-type: none"> • Introduction to stack • LIFO (Last in First out) Operations on stack (PUSH and POP) and its Implementation • Converting expressions from INFIX to POSTFIX notation and evaluation of Postfix expression 	<ol style="list-style-type: none"> 1. Write a C++ program to implement stack as an array. 2. Write a C++ program to implement stack as a link list. 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Conversion of infix expressions to postfix ○ Evaluation of postfix expression using a stack ○ Programs on stacks and queues • Audio / Video <ul style="list-style-type: none"> ○ PPT and Video on stack & queue • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Art integration <ul style="list-style-type: none"> ○ Draw diagrams to show working of stack and queue • Inter disciplinary linkage: Mathematics • Core Skills: Problem solving, Creative thinking, Interpersonal Relationship 																								
Topic: Queue	<ul style="list-style-type: none"> • Introduction to Queue • FIFO (First in First out operations) Operations on Queue (Insert and Delete and its Implementation in C++ • Circular queue using array. 	<ol style="list-style-type: none"> 1. Write a C++ program to implement queue as an array. 2. Write a C++ program to implement queue as a link list. 3. Write a C++ program to implement circular queue as an array. 																									
September	Half Yearly Examination																										
October No. of periods: 30 Topic: Data base Concepts	<ul style="list-style-type: none"> • Introduction to database concepts and its need. • Relational data model: Concept of domain, tuple, relation, key, primary key, alternate key, candidate key. • Relational algebra: Selection, Projection, Union and Cartesian product 	Write SQL commands for the following: <ol style="list-style-type: none"> 1. Create following table: items with Itemno as primary key. Iname should not be blank. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Itemno</th> <th>Iname</th> <th>Price</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Soap</td> <td>50</td> <td>100</td> </tr> <tr> <td>102</td> <td>Powder</td> <td>100</td> <td>50</td> </tr> <tr> <td>103</td> <td>Cream</td> <td>150</td> <td>25</td> </tr> <tr> <td>104</td> <td>Pen</td> <td>50</td> <td>200</td> </tr> <tr> <td>105</td> <td>Soap box</td> <td>20</td> <td>100</td> </tr> </tbody> </table> <ol style="list-style-type: none"> 2. add a column date_purchase of type 'date' 3. change the width of Iname to 25 characters. 4. remove field date_purchase. 5. remove the structure of Items table. 	Itemno	Iname	Price	Quantity	101	Soap	50	100	102	Powder	100	50	103	Cream	150	25	104	Pen	50	200	105	Soap box	20	100	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Database Concepts ○ SQL • Audio / Video <ul style="list-style-type: none"> ○ PPT on Relational Data Model • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Art integration <ul style="list-style-type: none"> ○ Draw diagrams to show relational data model • Inter disciplinary linkage: Mathematics • Core Skills: Problem solving, Creative thinking
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Topic: Structured Query Language	<ul style="list-style-type: none"> • General Concepts: Advantages of using SQL, DDL and DML • Data Types: Number/Decimal, Character/ Varchar/ Varchar2, Date • SQL Commands: Create Table, Drop Table, Alter Table 																										

Month/Topic	Theory	Practical/Project	Miscellaneous																																																																																							
Topic: Structured Query Language	<ul style="list-style-type: none"> SQL COMMANDS: UPDATE...SET..., INSERT, DELETE, SELECT, DISTINCT, FROM, WHERE, IN, BETWEEN, GROUP BY, HAVING, ORDER BY SQL functions: SUM(), AVG(), COUNT(), MAX() and MIN() Obtaining results (SELECT query) from 2 tables using equi-join, Cartesian Product and Union 	<p>1. Create a table flight with following structure: Table: FLIGHT</p> <table border="1"> <thead> <tr> <th>FL_NO (90 characters)</th> <th>STARTING (90 characters)</th> <th>ENDING (90 characters)</th> <th>NO_FLIGHTS (Integer)</th> <th>NO_STOPS (Integer)</th> </tr> </thead> </table> <p>2. Insert 9 records in above table with following values:</p> <table border="1"> <thead> <tr> <th>FL_NO</th> <th>STARTING</th> <th>ENDING</th> <th>NO_FLIGHTS</th> <th>NO_STOPS</th> </tr> </thead> <tbody> <tr><td>IC301</td><td>Mumbai</td><td>Delhi</td><td>8</td><td>0</td></tr> <tr><td>IC799</td><td>Bangalore</td><td>Delhi</td><td>2</td><td>1</td></tr> <tr><td>MC101</td><td>Indore</td><td>Mumbai</td><td>3</td><td>0</td></tr> <tr><td>IC302</td><td>Delhi</td><td>Mumbai</td><td>8</td><td>0</td></tr> <tr><td>AM812</td><td>Kanpur</td><td>Bangalore</td><td>3</td><td>1</td></tr> <tr><td>IC899</td><td>Mumbai</td><td>Kochi</td><td>1</td><td>4</td></tr> <tr><td>AM501</td><td>Delhi</td><td>Trivandrum</td><td>1</td><td>5</td></tr> <tr><td>MU499</td><td>Mumbai</td><td>Madras</td><td>3</td><td>3</td></tr> <tr><td>IC701</td><td>Delhi</td><td>Ahmedabad</td><td>4</td><td>0</td></tr> </tbody> </table> <p>3. Create another table fares with following structure: TABLE: FARES</p> <table border="1"> <thead> <tr> <th>FL_NO (90 characters)</th> <th>AIRLINES (90 characters)</th> <th>FARE (integer)</th> <th>TAX (integer)</th> </tr> </thead> </table> <p>4. Insert 7 records in above table with following values:</p> <table border="1"> <thead> <tr> <th>FL_NO</th> <th>AIRLINES</th> <th>FARE</th> <th>TAX</th> </tr> </thead> <tbody> <tr><td>IC701</td><td>Indian Airlines</td><td>6500</td><td>10</td></tr> <tr><td>MU499</td><td>Sahara</td><td>10400</td><td>5</td></tr> <tr><td>AM501</td><td>Jet Airways</td><td>13450</td><td>8</td></tr> <tr><td>IC302</td><td>Indian Airlines</td><td>4300</td><td>10</td></tr> <tr><td>IC799</td><td>Indian Airlines</td><td>10500</td><td>10</td></tr> <tr><td>MC101</td><td>Deccan Airlines</td><td>3500</td><td>4</td></tr> </tbody> </table>	FL_NO (90 characters)	STARTING (90 characters)	ENDING (90 characters)	NO_FLIGHTS (Integer)	NO_STOPS (Integer)	FL_NO	STARTING	ENDING	NO_FLIGHTS	NO_STOPS	IC301	Mumbai	Delhi	8	0	IC799	Bangalore	Delhi	2	1	MC101	Indore	Mumbai	3	0	IC302	Delhi	Mumbai	8	0	AM812	Kanpur	Bangalore	3	1	IC899	Mumbai	Kochi	1	4	AM501	Delhi	Trivandrum	1	5	MU499	Mumbai	Madras	3	3	IC701	Delhi	Ahmedabad	4	0	FL_NO (90 characters)	AIRLINES (90 characters)	FARE (integer)	TAX (integer)	FL_NO	AIRLINES	FARE	TAX	IC701	Indian Airlines	6500	10	MU499	Sahara	10400	5	AM501	Jet Airways	13450	8	IC302	Indian Airlines	4300	10	IC799	Indian Airlines	10500	10	MC101	Deccan Airlines	3500	4	<ul style="list-style-type: none"> Assignment <ul style="list-style-type: none"> SQL (writing SQL commands for the given queries Finding output of SQL commands Discussion of Scoring Points/ Marking Scheme/ Sample Questions Inter disciplinary linkage: Mathematics Core Skills: Problem solving, Creative thinking
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Month/Topic	Theory	Practical/Project	Miscellaneous
<p>Topic: Structured Query Language</p>		<ol style="list-style-type: none"> 5. Display FL_NO and number of flights from Kanpur to Bangalore from table Flight. 6. Arrange the contents of the table flight in ascending order of flight no. 7. Display the details of those Flights whose destination is Mumbai. 8. Display the details of those Flights which are not stopping in-between. 9. Display details of Flights where no_flights are not more than 5 in descending order of FL_NO. 10. Display the minimum fare offered by “Indian Airlines”. 11. Display the FL_NO and fare to be paid for the flights from DELHI using the tables FLIGHT and FARE, where fare to be paid = FARE + FARE x TAX/100 12. Count number of flights from Delhi. 13. Find the average fare of Indian Airlines. 14. Count number of flights whose FL_NO starts with “I”. 15. Increase the fare of “Sahara” Airlines by 1000. 16. Delete the record of “India Airlines”. 17. Display FL_NO, STARTING, ENDING from FLIGHT table, AIRLINES, FARE from FARE table according to their matching FL_NO. 	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ SQL (writing SQL commands for the given queries) ○ Finding output of SQL commands • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Inter disciplinary linkage: Mathematics • Core Skills: Problem solving, Creative thinking, Interpersonal Relationship
<p>November No. of periods: 36 Topic: Boolean Algebra</p>	<p>Role of Logical Operations in Computing.</p> <ul style="list-style-type: none"> • Binary-valued Quantities • Boolean Variable, Boolean Constant and Boolean Operators: AND, OR, NOT • Truth Tables • Closure Property, Commutative Law, Associative Law, Identity law, Inverse Law, Principle of Duality, Idempotent Law, Distributive Law, Absorption Law, Involution 	<p>-</p>	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Boolean Algebra • Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month/Topic	Theory	Practical/ Project	Miscellaneous
	<p>Law, DeMorgan's Law and their applications</p> <ul style="list-style-type: none"> • Obtaining Sum of Product (SOP) and Product of Sum (POS) form from the Truth Table • Reducing Boolean Expression (SOP and POS) to its minimal form. Use of Karnaugh Map for minimization of Boolean expressions (up to 4 variables). • Application of Boolean Logic: Digital electronic circuit design using basic Logic Gates (NOT, AND, OR, NAND, NOR), Use of Boolean operators (NOT, AND, OR) in search engine queries. 	-	<ul style="list-style-type: none"> • Inter disciplinary linkage: Mathematics • Core Skills: Problem solving, Creative thinking, Interpersonal Relationship
<p>Topic: Communication Technologies</p>	<ul style="list-style-type: none"> • Evolution of Networking: ARPANET, Internet, Interspace. Different ways of sending data across the network with reference to switching techniques (Circuit and Packet switching). • Data Communication terminologies: Concept of Channel, Bandwidth (Hz, KHz, MHz) and Data transfer rate • Transmission media: Twisted pair cable, coaxial cable, optical fiber, infrared, radio link, microwave link and satellite link. • Network devices: Modem, RJ45 connector, Ethernet Card, Router, Repeater, Switch, Gateway, wifi card • Network Topologies and types: Bus, Star, Tree, PAN, LAN, WAN, MAN. • Network Protocol: TCP/IP, File Transfer Protocol (FTP), PPP, SMTP, POP3, Remote Login (Telnet), Internet Wireless/Mobile Communication protocol such as GSM, CDMA, GPRS, WLL. • Mobile Telecommunication Technologies: 1G, 2G, 3G and 4G • Electronic mail protocols such as SMTP, POP3, protocols for Chat and Video Conferencing VOIP • Wireless technologies such as Wi-Fi and WiMax • Network Security Concepts: Threats and prevention from Viruses, Worms, Trojan horse, Spams; Use of Cookies, Protection using Firewall. India IT Act, Cyber Law, Cyber Crimes, IPR issues, hacking. 	-	<ul style="list-style-type: none"> • Assignment <ul style="list-style-type: none"> ○ Communication Technologies • Audio / Video <ul style="list-style-type: none"> ○ Video on Evolution of networking and switching techniques ○ Video on transmission media ○ Video on network devices ○ Video on Network Topologies and types of networks • Discussion of Scoring Points/ Marking Scheme/ Sample Questions • Art Integration <ul style="list-style-type: none"> ○ Draw diagrams to show different types of topologies • Core Skills: Empathy, Interpersonal Relationship

Month/Topic	Theory	Practical/ Project	Miscellaneous
Topic: Communication Technologies	<ul style="list-style-type: none"> Introduction to Web services: WWW, Hyper Text Markup Language (HTML), eXtensible Markup Language (XML), Hyper Text Transfer Protocol (HTTP), Domain Names, URL, Website, Web browser, Web Servers, Web Hosting, Web Scripting - Client side (VB Script, Java Script, PHP) and Server side (ASP, JSP, PHP), Web 2.0 (for social networking), E-commerce payment transactions using online banking, mobile banking and payment apps and services. 	-	<ul style="list-style-type: none"> Assignment <ul style="list-style-type: none"> Communication Technologies Discussion of Scoring Points/ Marking Scheme/ Sample Questions Core Skills: Empathy, Interpersonal Relationship
December	Pre Board Examination		
January	Revision		
February	Revision		
March	Annual Examination		

EXAMINATION SYLLABUS

PERIODIC TEST - 1

Unit 1: Object Oriented Programming with C++

- Chapter 1 Review of C++
- Chapter 2 Concept of Object Oriented Programming
- Chapter 3 Classes and Objects
- Chapter 4 Constructor and Destructor
- Chapter 5 Inheritance
- Chapter 6 Pointers

HALF YEARLY EXAMINATION

Unit 1: Object Oriented Programming in C++

Unit 2: Data Structures: Arrays

PRE-BOARD EXAMINATION

Full syllabus

NOTE: There will be a class test and assignment after every chapter.

**Curriculum Plan of Physical Education
(Session: 2019-2020)**

Month Topic	Sub Topic	Audio Visual Inputs	Practical	Miscellaneous
April Topic: Planning in Sports No. of periods:	<ul style="list-style-type: none"> ➤ Meaning & Objectives of Planning ➤ Various Committees & its Responsibilities (pre; during & post) ➤ Tournament – Knock-Out, League Or Round Robin & Combination ➤ Procedure to Draw Fixtures – Knock-Out (Bye & Seeding) & League (Staircase & Cyclic) ➤ Intramural & Extramural – Meaning, Objectives & Its Significance ➤ Specific Sports Programme (Sports Day, Health Run, Run For Fun, Run For Specific Cause & Run For Unity) 	Video on Knock out & League tournament. Specific sports Programme.		<ul style="list-style-type: none"> • Assignment • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic: Sports & Nutrition	<ul style="list-style-type: none"> ➤ Balanced Diet & Nutrition: Macro & Micro Nutrients ➤ Nutritive & Non-Nutritive Components of Diet ➤ Eating for Weight Control – A Healthy Weight, The Pitfalls of Dieting, Food Intolerance & Food Myths 	Video on Balanced Diet		
Topic: Yoga & Lifestyle	<ul style="list-style-type: none"> ➤ Asanas as preventive measures ➤ Obesity: Procedure, Benefits & contraindications for Vajrasana, Hastasana, Trikonasana, Ardh Matsyendrasana ➤ Diabetes: Procedure, Benefits & contraindications for Bhujangasana, Paschimottasana, Pavan Muktasana, Ardh Matsyendrasana ➤ Asthema: Procedure, Benefits & contraindications for Sukhasana, Chakrasana, Gomukhasana, Parvatasana, Bhujangasana, Paschimottasana, Matsyasana ➤ Hypertension: Tadasana, Vajrasana, Pavan Muktasana, Ardha Chakrasana, Bhujangasana, Sharasana ➤ Back Pain: Tadasana, Ardh Matsyendrasana, Vakrasana, Shalabhasana, Bhujangasan 	Video on Procedure, Benefits on yoga with lifetime disease		

Month Topic	Sub Topic	Audio Visual Inputs	Practical	Miscellaneous
Topic: Physical Education & Sports for CWSN (Children With Special Needs - Divyang)	<ul style="list-style-type: none"> ➤ Concept of Disability & Disorder ➤ Types of Disability, its causes & nature (cognitive disability, intellectual disability, physical disability) ➤ Types of Disorder, its cause & nature (ADHD, SPD, ASD, ODD, OCD) Disability Etiquettes ➤ Advantage of Physical Activities for children with special needs ➤ Strategies to make Physical Activities assessable for children with special need 	Video on Differentiations Between Disability & Disorder		<ul style="list-style-type: none"> • Assignment • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
May Topic: Children & Women in Sports	<ul style="list-style-type: none"> ➤ Motor development & factors affecting it ➤ Exercise Guidelines at different stages of growth & Development ➤ Common Postural Deformities - Knock Knee; Flat Foot; Round Shoulders; Lordosis, Kyphosis, Bow Legs and Scoliosis and their corrective measures ➤ Sports participation of women in India ➤ Special consideration (Menarch & Menstrual Disfunction) ➤ Female Athletes Triad (Oestoporosis, Amenoria, Eating Disorders) 	Video on Common Postural deformities in children	Fitness tests administration for all items.	<ul style="list-style-type: none"> • Assignment • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
Topic Test & Measurement in Sports	<ul style="list-style-type: none"> ➤ Motor Fitness Test – 50 M Standing Start, 600 M Run/Walk, Sit & Reach, Partial Curl Up, Push Ups (Boys), Modified Push Ups (Girls), Standing Broad Jump, Agility – 4x10 M Shuttle Run ➤ General Motor Fitness – Barrow three item general motor ability (Standing Broad Jump, Zig Zag Run, Medicine Ball Put – For Boys: 03 Kg & For Girls: 01 Kg) ➤ Measurement of Cardio Vascular Fitness – Harvard Step Test/Rockport Test - Computation of Fitness Index: Duration of the Exercise in Seconds x 100 5.5 x Pulse count of 1-1.5 Min after Exercise ➤ Rikli & Jones - Senior Citizen Fitness Test <ol style="list-style-type: none"> 1. Chair Stand Test for lower body strength 2. Arm Curl Test for upper body strength 3. Chair Sit & Reach Test for lower body flexibility 4. Back Scratch Test for upper body flexibility 5. Eight Foot Up & Go Test for agility 6. Six Minute Walk Test for Aerobic Endurance 	Video on Test & Measurement	Procedure for Asanas, Benefits & Contra-indication for any two Asanas for each lifestyle disease.	<ul style="list-style-type: none"> • Assignment • Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Practical	Miscellaneous
July Topic: Physiology & Injuries in Sports	<ul style="list-style-type: none"> ➤ Physiological factor determining component of Physical Fitness ➤ Effect of exercise on Cardio Respiratory System ➤ Effect of exercise on Muscular System ➤ Physiological changes due to ageing ➤ Sports injuries: Classification (Soft Tissue Injuries:(Abrasion, Contusion, Laceration, Incision, Sprain & Strain) Bone & Joint Injuries: (Dislocation, Fractures: Stress Fracture, Green Stick, Communated, Transverse Oblique & Impacted) Causes, Prevention & treatment ➤ First Aid – Aims & Objectives 	Video on Sports injuries	Procedure for administering Senior Citizen Fitness Test for 5 elderly family members.	<ul style="list-style-type: none"> • Assignment • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
August Topic: Biomechanics & Sports	<ul style="list-style-type: none"> ➤ Meaning and Importance of Biomechanics in Sports ➤ Types of movements (Flexion, Extension, Abduction & Adduction) ➤ Newton’s Law of Motion & its application in sports ➤ Friction & Sports 	Video on Components of biomechanics	Any one game of your choice out of the list above. Labelled diagram of field & equipment (Rules, Terminologies & Skills).	<ul style="list-style-type: none"> • Assignment • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
September Topic: Psychology & Sports	Half Yearly Examination			
	<ul style="list-style-type: none"> ➤ Personality; its definition & types – Trait & Types (Sheldon & Jung Classification) & Big Five Theory ➤ Motivation, its type & techniques ➤ Exercise Adherence; Reasons to Exercise, Benefits of Exercise ➤ Strategies for Enhancing Adherence to Exercise ➤ Meaning, Concept & Types of Aggressions in Sports 	Video on Big five theory, Aggressions in sports		<ul style="list-style-type: none"> • Assignment • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
October Topic: Training in Sports	<ul style="list-style-type: none"> ➤ Strength – Definition, types & methods of improving Strength – Isometric, Isotonic & Isokinetic ➤ Endurance - Definition, types & methods to develop Endurance – Continuous Training, Interval Training & Fartlek Training 	Video on all types of sports training		

Month Topic	Sub Topic	Audio Visual Inputs	Practical	Miscellaneous
Topic: Training in Sports	<ul style="list-style-type: none"> ➤ Speed – Definition, types & methods to develop Speed – Acceleration Run & Pace Run ➤ Flexibility – Definition, types & methods to improve flexibility ➤ Coordinative Abilities – Definition & types ➤ Circuit Training - Introduction & its importance 			<ul style="list-style-type: none"> • Assignment • Discussion of Scoring Points/ Marking Scheme/ Sample Questions
November	Revision			
December	Pre Board Examination			
January	Revision			
February	Revision			
March	Annual Examination			

EXAMINATION SYLLABUS



PERIODIC TEST - 1

Unit 1

HALF YEARLY EXAMINATION

Units 1 to 7

PRE-BOARD EXAMINATION

Full Syllabus

NOTE: There will be a class test and assignment after every chapter.

अभिभावक कृपया ध्यान दें

1. स्कूल में अपना पता तथा टेलीफोन नंबर हमेशा सही-सही लिखवा कर रखें, जिससे की इमरजेंसी में आपसे बिना विलंब के संपर्क साधा जा सके | अपने बच्चे को स्कूल शुरू होने के आधे घंटे पहले तथा स्कूल खत्म होने के आधे घंटे बाद से ज्यादा देर तक स्कूल में न छोड़े |
2. अपने बच्चे का टिफिन अनजान व्यक्ति के हाथ से न भेजें, वह नहीं लिया जाएगा | अपने बच्चे को ले जाने के लिए अनजान व्यक्ति को न भेजें, उसके साथ बच्चा नहीं भेजा जाएगा |
3. कृपया बच्चे की फीस लोकल बैंक से अप्रैल, जुलाई, अक्टूबर तथा जनवरी की दस तारीख तक जमा करवा दें / उसके बाद 1 रु. प्रतिदिन फाइन लगेगा / अगर आपका बैंक किसी कारण से वापिस आता है तो 500 रुपये पेनल्टी तथा लेट फी फाइन लगेगा एवं फीस केवल ड्राफ्ट द्वारा ली जाएगी / दूसरी बार बैंक नहीं लिया जाएगा /
4. देर से आने वाले बच्चों को वापिस भेज दिया जाएगा /

अभिभावक के हस्ताक्षर