

DELHI PUBLIC SCHOOL, GANDHINAGAR
SYLLABUS 2021 – 22
CLASS XII - SCIENCE

MONTH	MAIN COURSE BOOK (FLAMINGO)	SUPPLEMENTARY READER(VISTAS)	ADVANCED WRITING SKILLS/ ACTIVITY
April - May	1. The Last Lesson (Prose) 2. My Mother at Sixty Six (Poem)	-----	1. Notice Writing 2. Advertisement 3. Letter to Editor 4. Letter of Enquiry
June	1 Lost Spring (Prose).	1.The Third Level	
July	1. An Elementary School classroom in a slum (Poem)	1.The Tiger King	1.Letter of Placing Order, 2. Letter of Complaint
Syllabus for Periodic Test-I			
The Third Level, The Last Lesson, Lost Spring, My Mother at Sixty Six, An Elementary School classroom in a slum			
Advanced Writing Skills: 1. Notice Writing 2. Advertisements, Letter to Editor, Enquiry, Placing Order, Complaint			
August	1. Keeping Quiet (Poem) 2. Deep Water (Prose) 3. A Thing of Beauty (Poem).	1. Journey to the End of the Earth	1. Invitations and Replies 2. Debate
September	1. The Rattrap (Prose)	1. Should Wizard Hit Mommy?	1. Article 2. Speech Writing 3. Poster
Syllabus for Half-Yearly Examination-			
The Last Lesson, My Mother at Sixty Six , Lost Spring , An Elementary School classroom in a slum , Keeping Quiet , Deep Water, A Thing of Beauty, The Rattrap, The Third Level, The Tiger King Should Wizard Hit Mommy?, Journey to the End of the Earth			
WRITING SKILLS- Notice Writing, Advertisement Writing, Letter to the Editor, Enquiry, Placing Order, Complaint, Invitations and Replies, Debate, Article Writing, Speech, Poster			
PRACTICAL- ASL			
October	1. Indigo (Prose) 2. Poets and Pancakes 3. The Interview	1. The Enemy 2. On the Face of it	1. Newspaper & Magazine Report 2. Job Application
November	1.A Roadside Stand 2. Aunt Jennifer's Tigers (Poem)	1. Evans tries an O-Level	1. Letter giving replies
December	1.Going Places	1.Memories of Childhood	ASL Practice
Pre Board I & II : Complete Syllabus			
Practical- ASL			

Subject: Physics

MONTH	LESSONS	ACTIVITIES/PRACTICALS
April-May	L1: Electric charges and fields. L2: Electrostatic potential and capacitance	-----
June	L2: Electrostatic potential and capacitance (contd.) L3: Current electricity	A-1: To determine resistivity of two / three wires by plotting a graph for potential difference versus current. A-2: To find resistance of a given wire / standard resistor using metre bridge.
July	L3: Current electricity (contd.) L4: Moving charges and magnetism	A-3: To verify the laws of combination (series) of resistances using a metre bridge. A-4: To compare the EMF of two given primary cells using potentiometer. Act-1: To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source. Act-2: To assemble the components of a given electrical circuit.
Syllabus for Periodic Test 1 - L1, L2 and L3		
August	L5: Magnetism and matter L6: Electromagnetic Induction L7: Alternating current	A-5: To determine resistance of a galvanometer by half-deflection method and to find its figure of merit. A-6: To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same. Act-3: To study the variation in potential drop with length of a wire for a steady current.
September	L8: Electromagnetic waves L9: Ray optics and optical Instruments	B-1: To find the value of v for different values of u in case of a concave mirror and to find the focal length. B-2: To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$. B-6: To draw the characteristic curve of a zener diode and to determine its reverse breaks down voltage. Act-4: To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
Syllabus for Half Yearly Examination - L1, L2, L3, L4, L5, L6 and L7		

October	L9: Ray optics and optical Instruments (contd) L10: Wave optics L11: Dual nature of radiation and matter L12: Atoms	B-3: To determine refractive index of a glass slab using a travelling microscope. B-4: To find refractive index of a liquid by using convex lens and plane mirror. B-5: To draw the I-V characteristic curve for a p-n junction diode in forward bias and reverse bias.
November	L13: Nuclei L14: Semiconductor electronics	Act-5: To observe polarization of light using two Polaroids. Act-6: To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.
December	REVISION	Completion of Journal
Syllabus for Pre-Board – Full syllabus		

Subject: Chemistry

MONTH	LESSONS	PRACTICALS
April-May	L:10 Haloalkanes & Haloarenes L:11 Alcohols, Phenols & Ethers	-
June	L:12 Aldehydes, Ketones & Carboxylic acids	01. Preparation of 250 ml M/20 solution of Mohr's solution. Determination of molarity and strength of KMnO_4 solution using Mohr's salt. 02. Preparation of 250 ml M/20 solution of Mohr's solution. Determine the percentage purity of KMnO_4 solution using Mohr's salt.
July	L:13 Organic Compounds containing Nitrogen L:02 Solutions L:03 Electrochemistry	03. Determination of water of crystallization in Mohr's salt by using 0.011M KMnO_4 solution. 04. Preparation of 250 ml M/50 solution of Oxalic acid solution. Determination of molarity and strength of KMnO_4 solution using Oxalic acid solution. 05. Find out the percentage purity of impure sample of oxalic acid. You are provided M/100 KMnO_4 solution.

06. Inorganic salt analysis: [Ammonium bromide, Lead nitrate]

Syllabus for Periodic Test: L:10, 11 & 12

August

L:04 Chemical Kinetics
L:05 Surface Chemistry
L:06 General Principles and Processes of Isolation of Elements

07. Inorganic salt analysis: [Aluminium nitrate, Zinc acetate]

08. Inorganic salt analysis: [Calcium chloride, Strontium nitrate, Barium bromide]

09. Inorganic salt analysis: [Magnesium sulphate, Ammonium phosphate, Calcium nitrate]

10. Inorganic salt analysis: [Strontium bromide, Nickel nitrate, Cobalt chloride, Ammonium sulphate]

September

L:07 p-Block Elements
L:08 d and f-Block Elements

11. Organic functional group analysis: [Aldehyde, Ketone]

12. Organic functional group analysis: [Alcohol, Phenol]

Syllabus for Half Yearly: L: 10, 11, 12, 13, 2, 3, 4, 5.

October

L:08 d and f-Block Elements
L:09 Coordination Compounds
L:01 Solid State
L:14 Biomolecules

13. Organic functional group analysis: [Carboxylic acid, Aromatic amine]

14. Effect of concentration on rate of reaction.

15. Effect of temperature on rate of reaction.

November

L:14 Biomolecules
L:15 Polymers
L:16 Chemistry in everyday life

Revision and Completion of Journal

December

L:16 Chemistry in everyday life

Syllabus for Pre-Board 1: L: 1 to 16 (Full syllabus)

Subject: Biology

Month	Lessons/ Chapters	Activities/ Practical
April-May	1. Reproduction in organisms 2. Sexual reproduction in flowering plants.	
June	3. Human reproduction	A1. Study of pollen germination on a slide B2. Study of pollen germination on stigma through a permanent slide. B3. Identification and study stages of gamete development in T.S of testis and ovary through permanent slides. B5. Study of T.S. of Blastula through permanent slide (Mammalian). B1. Study of flowers adapted to pollination by different agencies (Wind, insects, and birds).
July	4. Reproductive health 5. Principles of inheritance and Variation	B6. Study of Mendelian inheritance using seeds of different color and shape. B7. Study of prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and color blindness. B4. Study of stages of meiosis in onion flower buds. A7. To prepare a temporary mount of onion root tip to study mitosis. Submission of project (rough)
Syllabus for Periodic Test 1 - Chapter:1,2,3 &4		
August	5. Principles of inheritance and Variation (Contd.) 6. Molecular basis of inheritance 7. Evolution	A9. To extract DNA. B9. To identify common disease causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides or specimens. B8. Exercise on controlled pollination - emasculation, tagging and bagging. B10. Study of two plants and two animals (models/virtual images) found in xeric conditions. B11. Study of two plants and two animals (models/virtual images) found in aquatic conditions.
September	7. Evolution (Contd.) 8. Human health and disease	A2. Study of soil from at least two different sites for texture, moisture content, pH and water holding capacity. Correlate with the kinds of plants found in them.
Syllabus for Half Yearly Exam - Chapter:1 to 8		
October	9. Strategies for enhancement in food production 10. Microbes in human welfare 11. Biotechnology: Principles and processes	A3. To study water collected from water bodies for pH, clarity and presence of any living organism. A4. Study of presence of suspended particulate matter in air at two widely different sites.
November	12. Biotechnology and its applications 13. Organisms and populations	A5. Study of plant population density by quadrat method. A6. Study of plant population frequency by quadrat method.

		A8. To study the effect of different temperatures and three different pH on the activity of salivary amylase on starch. Submission of project (final copy)
December	14. Ecosystem 15. Biodiversity and conservation 16. Environmental issues	
Syllabus for Preboard 1 - All Chapters (Tentative)		
Syllabus for Preboard 2 - All Chapters		

Subject: Mathematics

MONTH	CHAPTERS	ACTIVITIES
April-May	Ch3. Matrices Ch4. Determinants	
June	Ch4. Determinants (Contd...) Ch1. Relations and Functions	(1) To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \perp m\}$ is symmetric but neither reflexive nor transitive. (2) To demonstrate a function which is not one-one but is onto. (3) To demonstrate a function which is one-one but not onto.
July	Ch1. Relations and Functions (Contd...) Ch2. Inverse Trigonometric Functions Ch5. Continuity and Differentiability	(4) To find analytically the limit of a function at a point and also to check the continuity of the function at that point.
Syllabus for P.T. 1: Chapters : 1, 2, 3 and 4		
August	Ch5. Continuity and Differentiability (Contd...) Ch6. Application of Derivatives	(5) To verify Rolle's theorem. (6) To understand the concepts of absolute maximum and absolute minimum of a function in a given closed interval through its graph.
September	Ch7. Integrals	
Syllabus for H. Y : Chapters : 1, 2, 3, 4, 5 and 6		
October	Ch7. Integrals (Contd...) Ch8. Application of Integrals Ch9. Differential Equations Ch10. Vector Algebra	(7) To evaluate the definite integral $\int_a^b \sqrt{1-x^2} dx$ as the limit of a sum and verify it by actual integration.
November	Ch10. Vector Algebra (Contd...) Ch11. Three-dimensional geometry	(8) To verify geometrically that $\vec{c} \times (\vec{a} + \vec{b}) = \vec{c} \times \vec{a} + \vec{c} \times \vec{b}$. (9) To locate the points to given co-ordinates in space, measure the distance between two points in space and then to verify the distance using distance formula.
December	Ch13. Probability Ch12. Linear Programming	(10) 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 a dice.
Syllabus for Pre board I : All chapters		

Subject: Physical Education

Month	Lessons/ Chapters	Activities/ Practical
April-May	Unit 1: Planning in Sports. Unit 2: Sports & Nutrition. Unit 3: Yoga & Lifestyle	
June	Unit4: Physical Education & Sports for CWSN	
Syllabus for Periodic Test-1 : Unit: 1 ,Unit: 2, Unit:3 & Unit: 4		
July	Unit 5: Children & women in sports Unit 6: Test & Measurement	Journal Work
August	Unit 6: Test & Measurement (Continue) Unit:7 Physiology & sports	
September	Unit:8 Biomechanics & sports	Journal Work
Half Yearly Syllabus: Unit: 1 - Unit:8		
October	Unit:9 Psychology & sports	
November	Unit:10 Training	Final Journal Submission
Pre board I: All Units		

Subject: Computer Science

Month	Lessons/ Chapters	Activities/Practicals
April-May	Ch1. Python Revision Tour-I Ch2. Python Revision Tour-II Ch3. Working with Functions	Program based on Functions
June	Ch4. Using Python Libraries Ch5. File Handling	Program based on Libraries Program based on Files
July	Ch5. File Handling (Contd...) Ch6. Recursion	Program Based on File Handling Program based on recursion
Syllabus for P.T. 1 : Chapters : 1, 2, 3 and 4		

August	Ch7. Idea of Algorithmic Efficiency Ch9.Data Structures : Stacks and Queues using Lists	Program based on Stacks and Queues
September	Ch-16 : Society Law and Ethics	Program based on Stacks and Queues
Syllabus for Half Yearly Examination (September): Chapters : 1, 2, 3, 4, 5, 6,7 and 9		
October	Ch12. MYSQL SQL Revision Tour Ch13. More on SQL Ch15. Interface Python with MySQL	SQL and Introduction to Project
November	Ch10.Computer Networks – I Ch11.Computer Networks-II	Project Work
Syllabus for Pre board I : All chapters		