KALKA PUBLIC SCHOOL
BPTP (PARKLANDS), SECTOR-76, FARIDABAD, HARYANA
Contact : 0129-4096099, 9643443345 | www.kpsbptp.com

Annual Syllabus
Session : 2023-24
Class : XII [Arts & Humanities]

SUBJECT : English (301)		
Books Prescribed : NCERT Class XII		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
March/April	**1. The Last Lesson 2. Lost Spring 3 My Mother at Sixty Six (Poem) 4. Deep Water**	**Draft an interview that Franz takes of his parents ,where they share their feelings when the prussians took control of Alsace and Lorraine**
May/June	**5. The Rattrap 6. An Elementary School Classroom in a Slum(Poem) 7. The Third Level Writing-Notice, Article writing**	**A comic strip of child procrastinating and later regretting for not having paid attention to the lessons .**
July	**8. Indigo 9. Keeping Quiet (Poem) 10. A Thing of Beauty(Poem) 11. The Tiger King Writing-Poster,Debate**	**Creative Writing**
August	12. Poets and Pancakes 13. Journey to the End of the Earth 14. A Roadside Stand (Poem) 15. Aunt Jennifer's Tigers (Poem	PPT on A Roadside Stand
September	16 .The Enemy 17. The Interview 18.Going Places Writing- Job Application.	Extempore
October	19. Should Wizard hit mommy 20.On the face of it Writing-Speech, Advertisements, Report	Jam -Just a minute
November	21. Evans tries O-level 22. Memories of Childhood	ASL
December	Revision for Boards	ASL
January	Preboards, Revision for Boards	ASL
February	Preboards, Revision for Boards	Group Discussion

Syllabus for Assessment (English)

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	**PT-1**	The Last Lesson , My Mother at Sixty Six (Poem) Third Level , Notice	presentation
	Half Yearly	The Rattrap, An Elementary School Classroom in a Slum(Poem), Deep Water , Writing-Notice, Article writing JULY, Indigo, Keeping Quiet (Poem) , A Thing of Beauty(Poem) , The Tiger King Writing-Poster,Debate AUGUST Poets and Pancakes , Journey to the End of the Earth , A Roadside Stand (Poem), Aunt Jennifer's Tigers (Poem) , The Enemy , The Interview , Going Places Writing-Job Application	Extempore
Term - 2	**PT-2**	Should Wizard hit mommy, .On the face of it Writing-Speech, Advertisements, Report	Group Discussion
	PT-3	Evans tries O-level , Memories of Childhood	Creative Writing
	Annual Exam	Full Syllabus	ASL

SUBJECT : HINIDI (302)		
Books Prescribed : NCERT 1.आरोह **2.**वितान **3.** □□□□□□□□ हिंदी और अभिव्यक्ति और माध्यम		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
March / April	□□□□ □□□□□□□□□□□ □□□**-2** □□□□□ □□□ □□□**-1** □□□□□□□□□ □□□ 2 □□□□ □□□□ □□□ □□**- 11** □□□□□ □□□ **-12** □□□□□ □□□□□ □□□□□ □□□□□□□□□□□ □□□ -1 □□□□□□ □□□□□□ □□□□□□□□□□ □□ □□□□□□ □□□□□□□□□□□ □□□ -1□□□□□□□□ □□□□ पाठ 2 □□□□□□□□ □□□□	भक्तिन □□□ , के □□□□□□□□ □□□ □□□□□ □□ □□□□□ □□□□□□□□□□□
May/June	आरोह पाठ्यपुस्तक भाग-2 काव्य भाग पाठ–3 कविता □□ □□□□□ □□□ □□□□ □□ □□ पाठ -4 कैमरे □□□ □□□ □□□□□□ गद्य भाग पाठ -13 □□□□ □□□□ □□□□ □□ पाठ 14 □□□□□□ □□ □□□□ वितान पाठ्यपुस्तक □□□ -2 □□□ □□□□□□□□□□ □□ □□□□□□ □□□□□□□□□□□ □□□ 3 □□□□□□□ □□□□□□ □□□□□□ □□□□□□ पाठ 4 □□□□□□□□ □□□□	कविता □□ □□□□□ □□□□□ □□ □□□□□ □□□□ □□□□□□□□□□□
July	**आरोह पाठ्यपुस्तक भाग-2** काव्य भाग □□□ -6 □□□ वितान पाठ्यपुस्तक पाठ -3 अतीत □□□ □□□ □□□□ अभिव्यक्ति और माध्यम पाठ्यपुस्तक पाठ -5 □□□□□□□ □□□□ □□□- 6 □□□□ □□□□	अपनी □□□□□ □□□□□□ □□□□□ □□□□ □□□□□ □□□□ □□□□□□□□□□□
August	**आरोह पाठ्यपुस्तक भाग-2** काव्य भाग पाठ–7 बादल □□□ पाठ -8 कवितावलीकवितावली वितान पाठ्यपुस्तक □□□ -4 □□□□□ □□ □□□□□ □□□□□□□□□□ □□ □□□□□□	□□□□□ □□□□ □□□ □□□ □□ □□□□□□□ □□□□ □□ □□□□ □□□□□□□□□□□।

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September	**आरोह पाठ्यपुस्तक भाग-2** काव्य भाग पाठ -10 छोटा □□□□ □□□ □□□□□ □□ □□□	श्रवण □ □□□□ □□□□□□□□□□□□
October	**आरोह पाठ्यपुस्तक भाग-2** गद्य भाग पाठ 17 शिरीष के फूल पाठ 18 श्रम विभाजन और जाति प्रथा	श्रवण □□□□ □□□□ □□ □□□□□ □□□□ □□□ □□□□ □□□□□□□□□□□□ ।
November	दोहरान □□□□□	A. S. L.
December	दोहरान □□□□□	A. S. L.
January	दोहरान □□□□□	A. S. L.
February	दोहरान □□□□□	A. S. L.

Syllabus for Assessment (Hindi)

	Assessment	Syllabus of Assessment	Practical/Project

Term - 1	**PT-1**	**आरोह पाठ्यपुस्तक भाग-2** काव्य भाग पाठ–1 आत्मपरिचय □□□ 2 □□□□ वितान पाठ्यपुस्तक □□□ -1 □□□□□□ □□□□□□ अभिव्यक्ति और माध्यम पाठ्यपुस्तक पाठ -1अनुच्छेद लेखन □□□ 2 □□□□□□□□ □□□□	ए .एस.एल.श्रवण व वाचन प्रतियोगिता
	Half Yearly	**रोह पाठ्यपुस्तक भाग-2** काव्य भाग पाठ–3 कविता के बहाने बात सीधी थी पर पाठ -4 कैमरे में बंद अपाहिज पाठ -6 उषा **गद्य भाग** पाठ -13 काले मेघा पानी दे पाठ 14 पहलवान की ढोलक वितान पाठ्यपुस्तक पाठ -2 जूझ अभिव्यक्ति और माध्यम पाठ्यपुस्तक पाठ 3 जनसंचार माध्यम प्रिंट माध्यम पाठ 4 संपादकीय लेखन	ए .एस.एल.श्रवण व वाचन प्रतियोगिता
Term - 2	**PT-2**	**आरोह पाठ्यपुस्तक भाग-2** काव्य भाग पाठ–7 बादल राग पाठ -8 कवितावली अभिव्यक्ति और माध्यम पाठ्यपुस्तक पाठ -7 पुस्तक समीक्षा पाठ -8 फीचर लेखन	ए .एस.एल.श्रवण व वाचन प्रतियोगिता

	PT-3	**आ रोह पाठ्यपुस्तक भाग-2** काव्य भाग □□□ -10 □□□□ □□□□ □□□ □□□□□ □□ □□□ वितान पाठ्यपुस्तक पाठ -2 जूझ अभिव्यक्ति और माध्यम पाठ्यपुस्तक पाठ -7 पुस्तक समीक्षा □□□ -8 □□□□ □□□□	श्रवण व वाचन प्रतियोगिता
	Annual Exam	समस्त □□□□□□□□□	

SUBJECT : HISTORY (027)		
Books Prescribed : THEMES IN INDIAN HISTORY PART-1, THEMES IN INDIAN HISTORY PART –II THEMES IN INDIAN HISTORY PART-III		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
March/April	Theme 1 Bricks, Beads and Bones Theme 2 Kings, Farmers and Towns	
May/June	Theme 3 Kinship, Caste and Class	

July	Theme 4 Thinkers, Beliefs and Buildings Theme 5 Through the Eyes of Travellers Theme 6 Bhakti –Sufi Traditions	Project report 1. The Indus Valley Civilization-Archeological Excavations and New Perspectives 2. The History and Legacy of Mauryan Empire 3. "Mahabharat"- The Great Epic of India 4. The History and Culture of the Vedic period 5. Buddha Charita 6. A Comprehensive History of Jainism 7. Bhakti Movement- Multiple interpretations and commentaries. 8. "The Mystical Dimensions of Sufism 9. Global legacy of Gandhian ideas 10.The Architectural Culture of the Vijayanagar Empire 11.Life of women in the Mughal rural society 12.Comparative Analysis of the Land Revenue Systems introduced by the Britishers in India 13. The Revolt of 1857- Causes; Planning & Coordination; Leadership, Vision of Unity 14.The Philosophy of Guru Nanak Dev 15.The Vision of Kabir 16.An insight into the Indian Constitution
August	Theme 7 An Imperial Capital: Vijayanagar Theme 8 – Peasants, Zamindars and the State Theme 10 Colonialism and The Countryside	
September	Theme 11 Rebels and the Raj Theme 13 Mahatma Gandhi and the Nationalist Movement	
October	Revision for Half Yearly Exams	
November	Theme 15 Framing the Constitution	
December	Full Syllabus Revision	
January	Full Syllabus Revision	
February	Full Syllabus Revision	

Syllabus for Assessment (History)

	Assessment	Syllabus for Assessment
	PT-1	Theme 1 Bricks, Beads and Bones Theme 2 Kings, Farmers and Towns Theme 3 Kinship, Caste and Class

Term-1	**PT-2**	Theme 4 Thinkers, Beliefs and Buildings Theme 5 Through the Eyes of Travellers Theme 6 Bhakti –Sufi Traditions
Term-2	**Half yearly**	Theme 2 Kings, Farmers and Towns Theme 3 Kinship, Caste and Class Theme 7 An Imperial Capital: Vijayanagar Theme 8 – Peasants, Zamindars and the State Theme 10 Colonialism and The Countryside Theme 11 Rebels and the Raj
	PT-3	Theme 11 Rebels and the Raj Theme 13 Mahatma Gandhi and the Nationalist Movement Theme 15 Framing the Constitution
	Annual Exam	Full Syllabus

SUBJECT: POLITICAL SCIENCE (028)		
BOOKS PRESCRIBED: Part A: Contemporary World Politics **Part B: Politics in India since Independence**		
MONTH	**Chapter no and name**	**Activity/Project/file**
March	CH-1 The End of Bipolarity	
April	CH-2 New Centres of Power	

May	CH-3 Contemporary South Asia	
July	CH-4 United Nations and its Organizations CH-5 Security in Contemporary World CH-6 Environment and Natural Resources	Project report "Any topic relevant to syllabus"
August	CH-7 Globalization CH-8 Challenges of Nation-Building CH-9 Planned Development	
September	CH-10 India's Foreign Policy CH-11 Parties and Party System in India CH-12 Democratic Resurgence	
October	Revision for Half Yearly Exams	
November	CH-13 Regional Aspirations CH-14 Indian Politics: Recent Trends and Development	
December	Full Syllabus Revision	
January	Full Syllabus Revision	
February	Full Syllabus Revision	

Syllabus for assessment (Political Science)

	Assessment	Syllabus for Assessment
Term-1	**PT-1**	CH-1 The End of Bipolarity CH-2 New Centres of Power CH-3 Contemporary South Asia
	PT-2	CH-4 United Nations and its Organizations

		CH-5 Security in Contemporary World CH-6 Environment and Natural Resources
Term-2	**Half yearly**	CH-7 Globalization CH-8 Challenges of Nation-Building CH-9 Planned Development CH-10 India's Foreign Policy CH-11 Parties and Party System in India CH-12 Democratic Resurgence
	PT-3	CH-13 Regional Aspirations CH-14 Indian Politics: Recent Trends and Development
	Annual Exam	Full Syllabus

SUBJECT : Physical Education(048)		
Books Prescribed :		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
April	**Unit I: Planning in Sports**	
May	**Unit II: Sports & Nutrition**	
July	**Unit II: Sports & Nutrition**	Project File (About one sport/game of choice)

		Demonstration of Fitness Activity Viva Voce (From Project File; Fitness)
August	**Unit V: Children & Women in Sports**	
September	Unit VIII: Biomechanics & Sports	
October	Unit III: Yoga & Lifestyle Unit IV: Physical Education & Sports for CWSN (Children With Special Needs – Divyang)	
November	Unit VII: Physiology & Injuries in Sports	Project File (Yoga and General Motor Fitness Test) Demonstration of Fitness Activity/Yoga Viva Voce (From Project File; General Motor Fitness; Yoga)
December	Unit IX: Psychology & Sports	
January	Unit X: Training in Sports	
February	Revision	

Syllabus for Assessment (Physical Education)

	Assessment	Syllabus of Assessment	Practical/Project
	PT-1	**Unit I: Planning in Sports**	

Term - 1	**Half Yearly**	**Unit I: Planning in Sports** **Unit II: Sports & Nutrition** **Unit 5 : Children and women in Sports** **Unit 8:**Biomechanics & Sports	Project File (About one sport/game of choice) Demonstration of Fitness Activity Viva Voce (From Project File; Fitness)
Term - 2	**PT-2**	Unit III: Yoga & Lifestyle	
	PT-3	Unit IV: Physical Education & Sports for CWSN (Children With Special Needs – Divyang)	
	Annual Exam	Full syllabus	Project File (Yoga and General Motor Fitness Test) Demonstration of Fitness Activity/Yoga Viva Voce (From Project File; General Motor Fitness; Yoga)

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Annual Syllabus
Session : 2023-24
Class : XII [Science]

SUBJECT : English (301)		
Books Prescribed : NCERT Class XII		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
March/April	**1. The Last Lesson 2. Lost Spring 3 My Mother at Sixty Six (Poem) 4. Deep Water**	**Draft an interview that Franz takes of his parents ,where they share their feelings when the prussians took control of Alsace and Lorraine**
May/June	**5. The Rattrap 6. An Elementary School Classroom in a Slum(Poem) 7. The Third Level Writing-Notice, Article writing**	**A comic strip of child procrastinating and later regretting for not having paid attention to the lessons .**
July	**8. Indigo 9. Keeping Quiet (Poem) 10. A Thing of Beauty(Poem) 11. The Tiger King Writing-Poster,Debate**	**Creative Writing**
August	12. Poets and Pancakes 13. Journey to the End of the Earth 14. A Roadside Stand (Poem) 15. Aunt Jennifer's Tigers (Poem	PPT on A Roadside Stand
September	16 .The Enemy 17. The Interview 18.Going Places Writing- Job Application.	Extempore
October	19. Should Wizard hit mommy 20.On the face of it Writing-Speech, Advertisements, Report	Jam -Just a minute
November	21. Evans tries O-level 22. Memories of Childhood	ASL
December	Revision for Boards	ASL
January	Preboards, Revision for Boards	ASL
February	Preboards, Revision for Boards	Group Discussion

Syllabus for Assessment (English)

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	**PT-1**	The Last Lesson , My Mother at Sixty Six (Poem) Third Level , Notice	presentation
	Half Yearly	The Rattrap, An Elementary School Classroom in a Slum(Poem), Deep Water , Writing-Notice, Article writing JULY, Indigo, Keeping Quiet (Poem) , A Thing of Beauty(Poem) , The Tiger King Writing-Poster,Debate AUGUST Poets and Pancakes , Journey to the End of the Earth , A Roadside Stand (Poem), Aunt Jennifer's Tigers (Poem) , The Enemy , The Interview , Going Places Writing-Job Application	Extempore
Term - 2	**PT-2**	Should Wizard hit mommy, .On the face of it Writing-Speech, Advertisements, Report	Group Discussion
	PT-3	Evans tries O-level , Memories of Childhood	Creative Writing
	Annual Exam	Full Syllabus	ASL

SUBJECT : Physics (042)		
Books Prescribed : NCERT - Physics part I and II *** Laboratory manual of Physics for class 12th published by NCERT**		
Month	**Chapter No. and Name**	**Activity / Project / Practical**
March/April	Unit 1- Electrostatics Chapter 1- Electric charges and fields Chapter 2 -Electrostatic potential and capacitance	1. To determine the resistance per cm of a given wire by plotting a graph between voltage and current. 2. To find the resistance of a given wire using a meter bridge.
May	Unit 1 -Electrostatics Chapter 2 -Electrostatic potential and capacitance Unit 2 - Current electricity Chapter 3- Current electricity	3. To compare the EMF of given primary cellsusing a potentiometer. 4. To determine the resistance of a galvanometer by half deflection method.
July	Unit 3- Magnetic effects of current and magnetism Chapter 4 -Moving charges and magnetism Chapter 5- Magnetism and matter	5. To verify the laws ofcombination of resistances by ohm's law.
August	Unit 4- Electromagnetic induction and alternating current Chapter 6 -Electromagnetic induction Chapter 7 -Alternating current	6. To identify a resistor ,capacitor and inductor and diode from a mixed collection of such items. 7. a. To observe the difference between a convex lens and a concave lens. b. Two observe the difference between aconvex mirror and a concave mirror and two estimate the lightly difference between the power of two given convex/ concave lenses
September	Unit 5-Electromagnetic waves Chapter 8 Electromagnetic waves Unit 6- optics Chapter 9 -Ray optics and optical	8. a. To design an inductor coil and to know the effect of change in the number of turns. b. Introduction of ferromagnetic material as its core material on the inductance of the coil.
October	Chapter 9 -Ray optics and optical instruments Chapter 10 -wave optics	9. To design a step up and step down transformer on a given transformer on a given core and know the relation between its

		input and output voltages.
November	Unit 7- dual nature of radiation and matter Chapter 11- dual nature of radiation and matter Unit 8 -atoms and nuclei Chapter 12- atoms Chapter 13 -nuclei Unit 9- electronic devices Chapter 14- semiconductor devices	
December	Revision	
January	Revision	
February	Revision	

Syllabus for Assessment (Physics)

	Assessment	Syllabus of Assessment	Practical/Activity
Term - 1	**PT-1**	Unit 1 -electrostatics Chapter 1 -electric charges andfields Chapter 2 - electrostatic potential and capacitance.	1. To determinethe resistance per CM of a given wire by plotting a graph between voltage and current.
	PT- 2	Chapter 4- moving charges in magnetism Chapter 5 –magnetism and matter	2. To compare the EMF of two given primary cells using a potentiometer
Term – 1	**Half Yearly**	Chapter 1 -electric charges andfields Chapter 2 -electrostatic potential and capacitance Chapter3 – Current electricity	3. To find the resistance of a given wire using meter bridge.
Term - 2	**PT-3**	Chapter 6- electromagnetic induction Chapter 9 -ray optics	4. To observe the difference between a convex lens and a concave lens.
	Annual Exam	Chapter 10 -wave optics Chapter 11 -dual nature ofradiation and matter Chapter 13- nuclei Chapter 14- semiconductorelectronics	External practical examination.

SUBJECT : Chemistry (055)		
Books Prescribed : NCERT and Pradeep's Chemistry		
Month	**Chapter No. and Name**	**Activity / Project / Practical**
March/April	Chapter 1: fundamentals of partnership Chapter 2: Valuation of goodwill Chapter 3: Change in Profit sharing ratio	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
May	Chapter 4: Admission of partners	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
July	Chapter 5: Retirement and death of a partner Chapter 6: Dissolution of firm.	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
August	Vol 2 part A Chpater1 : Issue of Shares Chapter 2 : issue of debentures	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
		● Assignments of these topics. ● Multiple choice questions. ● Revision tests
September	Part B Chapter 1: financial statements of companies Chapter 2: analysis of financial statements.	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
October	Chapter 3: accounting ratios Chapter 4: cash flow statements	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
November	Chapter 4: cash flow statements	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
December	Remedial classes Practical File Activity file	
January		
February		

Syllabus for Assessment (Chemistry)

	Assessment	Syllabus of Assessment	Practical/Activity
Term - 1	**PT-1**	Chapter 1 fundamentals of partnership Chapter 2: valuation of goodwill	Viva and practical
	Half Yearly	PT 1 syllabus and Chapter 3 change in Profit sharing Ratio Chapter 4 Admission of partner Chapter 5 Retirement and death Chapter 6 dissolution	Viva and practical
Term - 2	**PT-2**	Issue of shares	Viva and practical
	PT-3	Issue of debentures Financial statement of companies Liquidity and solvency ratios	Viva and practical
	Annual Exam	Part A Vol 1 Vol 2 Part B	External practical examination.

SUBJECT : Maths (041)		
Books Prescribed : NCERT (PART I AND PART II)		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
March	**Unit-II: Algebra CH 1. Matrices** 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. On commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).	
April	**CH 4. Determinants** Determinant of a square matrix (up to 3 x 3 matrices), 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.	
May	**Unit-I: Relations and Functions** **CH 1. Relations and Functions** Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions. **CH 2. Inverse Trigonometric** Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions.	**1.** To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l ⊥m} is symmetric but neither reflexive nor transitive. **2.** To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l || m} is an equivalence relation. **3.** To demonstrate a function that is not one-one but is onto. **4.** To demonstrate a function that is one-one but not onto. **5.** To draw the graph of $\frac{1}{\sin x}$, using the graph of sin x and demonstrate the concept of mirror reflection (about the line y = x). **6.** To explore the principal value of the function $\sin^{-1} x$ using a unit circle.

July	**Unit-III: Calculus** **CH 5. Continuity and Differentiability** Continuity and differentiability, chain rule, derivative of inverse trigonometric functions, $\sin^{-1}x$, $\cos^{-1}x$ and $\tan^{-1}x$, 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. **CH 6. Applications of Derivatives** Applications of derivatives: rate of change of bodies, increasing/decreasing functions, 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 reallife situations).	**7.** To sketch the graphs of e^x and $\log_e x$, a > 0, a ≠ 1 and to examine that they are mirror images of each other. **8.** To establish a relationship between common logarithm (to the base 10) and natural logarithm (to the base e) of the number x. **9.** 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. **10.** To verify that for a function f to be continuous at given point x_0, $\Delta y = \lvert f(x_0 + \Delta x) - f(x_0) \rvert$ is arbitrarily small provided. Δx is sufficiently small. **11.** To verify Rolle's Theorem. **12.** To verify Lagrange's Mean Value. **13.** To understand the concepts of decreasing and increasing functions. **14.** To understand the concepts of local maxima, local minima and point of inflection. **15.** To understand the concepts of absolute maximum and minimum values of a function in a given closed interval through its graph. **16.** To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner. **17.** To find the time when the area of a rectangle of given dimensions become maximum, if the length is decreasing and the breadth is increasing at given rates. **18.** To verify that amongst all the rectangles of the same perimeter, the square has the maximum area.

August	**CH 7. Integrals** Integration as an 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. $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}},$ $, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^{2+bx+c}}}$ $\int \frac{px + q}{ax^2 + bx + c} dx, \int \frac{px + q}{\sqrt{ax^{2+}bx + c}} dx,$ $\int \sqrt{a^2 \pm x^2}\, dx, \quad \int \sqrt{x^2 - a^2} dx$ Fundamental Theorem of Calculus (without proof).Basic properties of definite integrals and evaluation of definite integrals.	**19.** To evaluate the definite integral $\int_{\square}^{\square} \sqrt{(1 - \square^2)}$ dx as the limit of a sum and verify it by actual integration.
September	**CH 8. Applications of the Integrals** Applications in finding the area under simple curves, especially lines, parabolas; area of circles /ellipses (in standard form only) (the region should be clearly identifiable). **CH 9. Differential Equations** Definition, order and degree, general and particular solutions of a differential equation. 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: dy/dx + py = q, where p and q are functions of x or constants. d□/ d□ + px = q, where p and q are functions of y or constants.	

October	**Unit-IV: Vectors and Three-Dimensional Geometry** **CH 10: Vectors** 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. **CH 11: Three - dimensional Geometry** Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.	**20.** To verify geometrically that: $\vec{c}\times(\vec{a}+\vec{b})=\vec{c}\times\vec{a}+\vec{c}\times\vec{b}$ **21.** To verify that angle in a semicircle is a right angle, using the vector method. **22.** To locate the points to give coordinates in space, measure the distance between two points in space and then to verify the distance using distance formula. **23.** To demonstrate the equation of a plane in normal form. **24.** To verify that the angle between two planes are the same as the angle between their normals. **25.** To find the distance of a given point (in space) from a plane (passing through three non-collinear points) by actual measurement and also analytically. **26.** To measure the shortest distance between two skew lines and verify it analytically.
November	**Unit-V: Linear Programming** **CH 12: Linear Programming** Introduction, related terminology such as constraints, objective function, optimization, 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). **Unit-VI: Probability** **CH 13: Probability** Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable	**27.** To explain the computation of the conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice.
December	Pre Boards, Revision for Boards	—
January	Pre Boards, Revision for Boards	—
February	Boards	—

Syllabus for Assessment (Maths)

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	**PT-1**	CH 3: Matrices CH 4: Determinants	To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l ⊥m} is symmetric but neither reflexive nor transitive.
	Half Yearly	CH 1: Relations & Functions CH 2: Inverse Trigonometric Functions CH 3: Matrices CH 4: Determinants CH 5: Continuity and Differentiability CH 6: Application of Derivatives CH 7. Integrals	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.
Term - 2	**PT-2**	CH 8. Applications of the Integral CH 9. Differential Equations	To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.
	PT-3	CH 10. Vectors CH 11. Three - dimensional Geometry	To measure the shortest distance between two skew lines and verify it analytically.
	Annual Exam	Full syllabus	Every student will be asked to do at least one project based on the concepts learnt in the classroom.

SUBJECT : BIOLOGY (044)

Books Prescribed : NCERT

*** Laboratory manual of Biology for class 12th published by NCERT**

Month	Chapter No. and Name	Activity / Project/ Practical
March / April	**Unit-VI Reproduction** Chapter-2: Sexual Reproduction in Flowering Plants	• Practical 1- Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc. • Prepare a temporary mount to observe pollen germination. • Spotting- Flowers adapted to pollination by different agencies (wind, insects, birds). • Meiosis in onion bud cell or grasshopper testis through permanent slides. • Prepare a temporary mount of onion root tip to study mitosis.
May	Chapter-3: Human Reproduction Chapter-4: Reproductive Health	• Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice). • T.S. of blastula through permanent slides (Mammalian).
July	**Unit-VII Genetics and Evolution** Chapter-5: Principles of Inheritance and Variation Chapter-6: Molecular Basis of Inheritance Chapter-7 Evolution	Spotting- 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
August	**Unit-VIII Biology in Human Welfare** Chapter- 8: Human Health and Diseases Chapter-10: Microbes in Human Welfare	• Spotting- Common disease - causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides, models or virtual images. Comment on symptoms of diseases that they cause.
September	**Unit-IX Biotechnology** Chapter-11: Biotechnology - Principles and Processes Chapter-12: Biotechnology and its Application	

October	**<u>Unit-X Ecology</u>** Chapter-13: Organisms and Populations Chapter-14 : Ecosystem Chapter-15: Biodiversity and its Conservation	• Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organism 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.
November	Revision	
December	Revision	
January	Revision	
February	Revision	

Syllabus for Assessment (Biology)

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	PT-1	CH-2: Sexual Reproduction in Flowering Plant	1- Isolate DNA from available material such as spinach, green seeds, papaya, etc.
	Half Yearly	CH-2: Sexual Reproduction in Flowering Plants CH-3: Human Reproduction CH-4: Reproductive Health CH-5: Principles of Inheritance and Vari iation CH- 6: Molecular Basis of Inheritance	• Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
Term - 2	PT-2	CH- 8: Human Health and Diseases CHr-10: Microbes in Human Welfare	• Spotting- Common disease - causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides, models or virtual images. Comment on symptoms of diseases that they cause.
	PT-3	CH-13: Organisms and Populations CH-15: Biodiversity and its Conservation	• 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.
	Annual Exam	Complete syllabus	

SUBJECT : COMPUTER SCIENCE (083)		
Books Prescribed : NCERT - Computer Science with Python **Computer Science with Python (Sumita Arora, Preeti Arora)**		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
April	**UNIT- 1 (Computational Thinking and Programming - II)** Revision of Python topics covered in Class XI. Introduction Features of PythonKeywords Data Handling, Data Types, Type Conversion Operators, Expressions,Comments in Python Control Statements: Decision Making Statements, Iteration Statements, Jump Statements Strings, Lists, Tuples, DictionarySorting Techniques	• **Python Programs based on Lists, Strings, Tuples and Dictionary**
May	**UNIT- 1 (Computational Thinkingand Programming - II)** Data File Handling: Introduction, Why use filesData File Operations Opening and Closing Files withopen() and close() method Reading from file, Writing to afile, Appending to a file Relative and Absolute Paths Standard File Streams Binary File Operations Reading and Writing data from binaryfile Seek() and Tell() methods CSV files CSV file handling in Python Reading and Writing in CSV file	• **File Handling Programs in :** • **Text File** • **Binary File** • **CSV File**

July	**UNIT- 1 (Computational Thinking and Programming - II)** Functions in Python Introduction Difference b/w built-in and user defined functions Returning a value from functionParameters and Arguments in functions Passing Array/Lists in functions Flow of execution Scope of variable in function Using Main() as a function Recusrion	• **Python programs related to Functions**
August	**Unit I: Computational Thinking and Programming – II** Data Structure: Stack, operations on stack (push & pop), implementation of stack using list	• **Data Structures Programs on following:** • **Stack, Queue**
September	**Unit II: Computer Networks** Evolution of networking: introduction to computer networks, evolution of networking(ARPANET, NSFNET, INTERNET) Data communication terminologies: concept of communication, components of data communication (sender,receiver, message, communication media, protocols), measuring capacity of communication media(bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching) Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves	• **Practical of Computer Network and** • **Network Architecture**
October	**Unit II: Computer Networks** Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card) ● Network topologies and Network types: types of networks (PAN,LAN, MAN, WAN), networking topologies (Bus, Star, Tree) ● Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP ● Introduction to web services:WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML),domain names, URL, website, web browser, web servers, web hosting	• **Practical of Computer Network and** • **Network Architecture**
November	Database concepts: introduction to database concepts and its need Relationaldata model: relation, attribute, tuple, domain, degree, cardinality, keys (candidate key,• primary key, alternate key,foreign key) Structured Query Language: introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null,	• **Database interface with Python** • **MySQL Practical**

	unique, primary key), create database, use database, show databases, drop database, show tables, create table, describe table, alter table (add and remove an attribute, add and remove primary key), drop table, insert, delete, select, operators (mathematical, relationaland logical), aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete command Aggregate functions (max, min, avg, sum, count), group by, having clause, joins : Cartesian product on two tables, equi join and natural join Interface of python with an SQL database: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications	
December	**RevisionTests** **Project Work** **Practical File**	
January		
February		

Syllabus for Assessment 2023-24

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	**PT-1**	**UNIT- 1 (Computational Thinking and Programming - II)** Python Revision Tour Data File Handling	• **Data File Handling Programs in Python**
	PT-2	**Unit -II (Computer Networks)**	• **Practical of Computer Network and Network Architecture**
MID TERM		**UNIT- 1 (Computational Thinking and Programming - II)** Python Revision Tour Data File Handling Functions Data Structure	• **Programs based on following:** • **Data file handling** • **Functions** • **Data Structures**
Term - 2	**PT-3**	**UNIT - III (Database Management)**	• **Database Queries** • **Database interface with Python** • **MySQL Practical**
	Annual Exam	**Unit -II (Computer Networks)** **UNIT-III (Database Management)**	• **Practical of Computer Network and Network Architecture** • **Database Queries** • **Database interface with Python** • **MySql Practical**

SUBJECT : Physical Education (048)		
Books Prescribed :		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
April	**Unit I: Planning in Sports**	
May	**Unit II: Sports & Nutrition**	
July	**Unit II: Sports & Nutrition**	Project File (About one sport/game of choice) Demonstration of Fitness Activity Viva Voce (From Project File; Fitness)
August	**Unit V: Children & Women in Sports**	
September	Unit VIII: Biomechanics & Sports	
October	Unit III: Yoga & Lifestyle Unit IV: Physical Education & Sports for CWSN (Children With Special Needs – Divyang)	
November	Unit VII: Physiology & Injuries in Sports	Project File (Yoga and General Motor Fitness Test) Demonstration of Fitness Activity/Yoga Viva Voce (From Project File; General Motor Fitness; Yoga)
December	Unit IX: Psychology & Sports	
January	Unit X: Training in Sports	
February	Revision	

Syllabus for Assessment (Physical Education)

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	**PT-1**	**Unit I: Planning in Sports**	
	Half Yearly	**Unit I: Planning in Sports** **Unit II: Sports & Nutrition** **Unit 5 : Children and women in Sports** **Unit 8:**Biomechanics & Sports	Project File (About one sport/game of choice) Demonstration of Fitness Activity Viva Voce (From Project File; Fitness)
Term - 2	**PT-2**	Unit III: Yoga & Lifestyle	
	PT-3	Unit IV: Physical Education & Sports for CWSN (Children With Special Needs – Divyang)	
	Annual Exam	Full syllabus	Project File (Yoga and General Motor Fitness Test) Demonstration of Fitness Activity/Yoga Viva Voce (From Project File; General Motor Fitness; Yoga)

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Annual Syllabus
Session : 2023-24
Class : XII [Commerce]

SUBJECT : English (301)		
Books Prescribed : NCERT Class XII		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
March/April	**1. The Last Lesson 2. Lost Spring 3 My Mother at Sixty Six (Poem) 4. Deep Water**	**Draft an interview that Franz takes of his parents ,where they share their feelings when the prussians took control of Alsace and Lorraine**
May/June	**5. The Rattrap 6. An Elementary School Classroom in a Slum(Poem) 7. The Third Level Writing-Notice, Article writing**	**A comic strip of child procrastinating and later regretting for not having paid attention to the lessons .**
July	**8. Indigo 9. Keeping Quiet (Poem) 10. A Thing of Beauty(Poem) 11. The Tiger King Writing-Poster,Debate**	**Creative Writing**
August	12. Poets and Pancakes 13. Journey to the End of the Earth 14. A Roadside Stand (Poem) 15. Aunt Jennifer's Tigers (Poem	PPT on A Roadside Stand
September	16 .The Enemy 17. The Interview 18.Going Places Writing- Job Application.	Extempore
October	19. Should Wizard hit mommy 20.On the face of it Writing-Speech, Advertisements, Report	Jam -Just a minute
November	21. Evans tries O-level 22. Memories of Childhood	ASL
December	Revision for Boards	ASL
January	Preboards, Revision for Boards	ASL
February	Preboards, Revision for Boards	Group Discussion

Syllabus for Assessment (English)

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	**PT-1**	The Last Lesson , My Mother at Sixty Six (Poem) Third Level , Notice	presentation
	Half Yearly	The Rattrap, An Elementary School Classroom in a Slum(Poem), Deep Water , Writing-Notice, Article writing JULY, Indigo, Keeping Quiet (Poem) , A Thing of Beauty(Poem) , The Tiger King Writing-Poster,Debate AUGUST Poets and Pancakes , Journey to the End of the Earth , A Roadside Stand (Poem), Aunt Jennifer's Tigers (Poem) , The Enemy , The Interview , Going Places Writing-Job Application	Extempore
Term - 2	**PT-2**	Should Wizard hit mommy, .On the face of it Writing-Speech, Advertisements, Report	Group Discussion
	PT-3	Evans tries O-level , Memories of Childhood	Creative Writing
	Annual Exam	Full Syllabus	ASL

SUBJECT : Accounts(055)		
Books Prescribed : DK Goel Part A and Part B		
Month	**Chapter No. and Name**	**Activity / Project / Practical**
March/April	Chapter 1: fundamentals of partnership Chapter 2: Valuation of goodwill Chapter 3: Change in Profit sharing ratio	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
May	Chapter 4: Admission of partners	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
July	Chapter 5: Retirement and death of a partner Chapter 6: Dissolution of firm.	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
August	Vol 2 part A Chpater1 : Issue of Shares Chapter 2 : issue of debentures	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
		● Assignments of these topics. ● Multiple choice questions. ● Revision tests
September	Part B Chapter 1: financial statements of companies Chapter 2: analysis of financial statements.	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
October	Chapter 3: accounting ratios Chapter 4: cash flow statements	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
November	Chapter 4: cash flow statements	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
December	Remedial classes Practical File Activity file	
January		
February		

Syllabus for Assessment (Accounts)

	Assessment	Syllabus of Assessment	Practical/Activity
Term - 1	**PT-1**	Chapter 1 fundamentals of partnership Chapter 2: valuation of goodwill	Viva and practical
	Half Yearly	PT 1 syllabus and Chapter 3 change in Profit sharing Ratio Chapter 4 Admission of partner Chapter 5 Retirement and death Chapter 6 dissolution	Viva and practical
Term - 2	**PT-2**	Issue of shares	Viva and practical
	PT-3	Issue of debentures Financial statement of companies Liquidity and solvency ratios	Viva and practical
	Annual Exam	Part A Vol 1 Vol 2 Part B	External practical examination.

SUBJECT : BUSINESS STUDIES (054)		
Books Prescribed : NCERT AND GEETA PUBLICATIONS		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
March/April	Chapter 1: nature and significance of management Chapter 2: principles of management	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
May	**Chapter 3: business environment** **Chapter 4: planning**	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
July	**Chapter 5: organising** **Chapter 6: staffing**	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
August	**Chapter 7: directing** **Chapter 8 : controlling**	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
September	**Chapter 9: financial management**	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
October	**Chapter 10: financial markets** **Chapter 11: marketing management**	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
November	**Chapter 12: consumer protection**	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
December	**Revision** **Tests** **Project Work** **Practical File**	
January		
February		

Syllabus for Assessment (Business Studies)

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	PT-1	Chapter 1: nature and significance of management Chapter 2 : principles of henry fayol.	Viva and practical
	PT-2	Chapter 2: principles of taylor Chapter 3 business environment Chapter 4: planning	Viva and practical
MID TERM		PT 1 PT 2 syllabus and Chapter 5 organising Chapter 6 staffing Chapter 7 directing	Viva and practical
Term - 2	PT-3	Chapter 8 controlling Chapter 9 financial management	Viva and practical
	Annual Exam	Chapter 4 planning Chapter 5 organising Chapter 6 staffing Chapter 7 directing Chapter 11 marketing management Chapter 12 consumer protection	Viva and practical

SUBJECT : Economics (030)		
Books Prescribed : sandeep garg macro eco and indian eco		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
March/April	Unit 1 Chapter 1 circular flow of income Chapter2 basic concepts Chapter 3 calculation of national income	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
May	Unit 2 Chapter 4 money Chapter 5 banking	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
July	Unit 3 Chapter 6 aggregate demand and aggregate supply Chapter 7 income determination Chapter 8 excess and deficient demand Unit 4 government budget	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
August	Unit 5 Chapter 10 forex Chapter 11 Balance of payment Indian eco Chapter 1 Indian economy on the eve of independence	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
September	Chapter 2 Indian eco 1950 to 1990 Chapter 3 new economic policy	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
October	Chapter 4: human capital formation Chapter 5 rural development Chapter 6 employment	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
November	Chapter 7 : environment and sustainable development Chapter 8 India China and Pakistan	● Assignments of these topics. ● Multiple choice questions. ● Revision tests
December	Remedial classes Practical File Activity file	
January		
February		

Syllabus for Assessment (Economics)

	Assessment	Syllabus of Assessment	Practical/Activity
Term - 1	**PT-1**	Unit 1 Chapter 1 circular flow of income Chapter 2 basic concepts Chapter 3 calculation of national income	Viva and practical
	Half Yearly	PT 1 syllabus and Unit 2 Chapter 4 money Chapter 5 banking Unit 3 Chapter 6 ad and as Chapter 7 income determination Chapter 8 excess and deficient demand Unit 4 government budget Unit 5	Viva and practical
Term - 2	**PT-2**	Chapter 1 Indian economy on the eve of independence Chapter 2 Indian economy 1950-1990	Viva and practical
	PT-3	Chapter 3 new economic policy Chapter 4 human capital formation	Viva and practical
	Annual Exam	Full Indian eco	External practical examination.

SUBJECT : Maths (041)		
Books Prescribed : NCERT (PART I AND PART II)		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
March	**Unit-II: Algebra** **CH 1. Matrices** 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. On commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).	—
April	**CH 4. Determinants** Determinant of a square matrix (up to 3 x 3 matrices), 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.	
May	**Unit-I: Relations and Functions** **CH 1. Relations and Functions** Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions. **CH 2. Inverse Trigonometric** Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions.	**1.** To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l ⊥m} is symmetric but neither reflexive nor transitive. **2.** To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l || m} is an equivalence relation. **3.** To demonstrate a function that is not one-one but is onto. **4.** To demonstrate a function that is one-one but not onto. **5.** To draw the graph of

		$\frac{1}{\sin x}$, using the graph of sin x and demonstrate the concept of mirror reflection (about the line y = x). **6.** To explore the principal value of the function $\sin^{-1} x$ using a unit circle.
July	**Unit-III: Calculus** **CH 5. Continuity and Differentiability** Continuity and differentiability, chain rule, derivative of inverse trigonometric functions, $\sin^{-1} x$, $\cos^{-1} x$ and $\tan^{-1} x$, 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. **CH 6. Applications of Derivatives** Applications of derivatives: rate of change of bodies, increasing/decreasing functions, 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 reallife situations).	**7.** To sketch the graphs of e^x and $\log_e x$, a > 0, a ≠ 1 and to examine that they are mirror images of each other. **8.** To establish a relationship between common logarithm (to the base 10) and natural logarithm (to the base e) of the number x. **9.** 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. **10.** To verify that for a function f to be continuous at given point x_0, $\Delta y = \lvert f(x_0 + \Delta x) - f(x_0) \rvert$ is arbitrarily small provided. Δx is sufficiently small. **11.** To verify Rolle's Theorem. **12.** To verify Lagrange's Mean Value. **13.** To understand the concepts of decreasing and

		increasing functions. **14.** To understand the concepts of local maxima, local minima and point of inflection. **15.** To understand the concepts of absolute maximum and minimum values of a function in a given closed interval through its graph. **16.** To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner. **17.** To find the time when the area of a rectangle of given dimensions become maximum, if the length is decreasing and the breadth is increasing at given rates. **18.** To verify that amongst all the rectangles of the same perimeter, the square has the maximum area.

August	**CH 7. Integrals** Integration as an 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. $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}},$ $, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^{2+bx+c}}}$ $\int \frac{px + q}{ax^2 + bx + c} dx, \int \frac{px + q}{\sqrt{ax^{2+}bx + c}} dx,$ $\int \sqrt{a^2 \pm x^2}\, dx, \quad \int \sqrt{x^2 - a^2} dx$ Fundamental Theorem of Calculus (without proof).Basic properties of definite integrals and evaluation of definite integrals.	**19.** To evaluate the definite integral $\int_{□}^{□} \sqrt{(1 - □^2)}$ dx as the limit of a sum and verify it by actual integration.
September	**CH 8. Applications of the Integrals** Applications in finding the area under simple curves, especially lines, parabolas; area of circles /ellipses (in standard form only) (the region should be clearly identifiable). **CH 9. Differential Equations** Definition, order and degree, general and particular solutions of a differential equation. 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: dy/dx + py = q, where p and q are functions of x or constants. d□/ d□ + px = q, where p and q are functions of y or constants.	b
October	**Unit-IV: Vectors and Three-Dimensional Geometry** **CH 10: Vectors** 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. **CH 11: Three - dimensional Geometry** Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.	**1.** To verify geometrically that: $\vec{c} \times (\vec{a} + \vec{b}) = \vec{c} \times \vec{a} + \vec{c} \times$ **2.** To verify that angle in a semicircle is a right angle, using the vector method. **3.** To locate the points to give coordinates in space, measure the distance between two points in space and then to verify the distance using distance formula. **4.** To demonstrate the

		equation of a plane in normal form. **5.** To verify that the angle between two planes are the same as the angle between their normals. **6.** To find the distance of a given point (in space) from a plane (passing through three non-collinear points) by actual measurement and also analytically. **7.** To measure the shortest distance between two skew lines and verify it analytically.
November	**Unit-V: Linear Programming** **CH 12: Linear Programming** Introduction, related terminology such as constraints, objective function, optimization, 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). **Unit-VI: Probability** **CH 13: Probability** Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable	**8.** To explain the computation of the conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice.
December	Pre Boards, Revision for Boards	—
January	Pre Boards, Revision for Boards	—
February	Boards	—

Syllabus for Assessment (Maths)

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	**PT-1**	CH 3: Matrices CH 4: Determinants	To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l ⊥m} is symmetric but neither reflexive nor transitive.
	Half Yearly	CH 1: Relations & Functions CH 2: Inverse Trigonometric Functions CH 3: Matrices CH 4: Determinants CH 5: Continuity and Differentiability CH 6: Application of Derivatives CH 7. Integrals	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.
Term - 2	**PT-2**	CH 8. Applications of the Integral CH 9. Differential Equations	To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.
	PT-3	CH 10. Vectors CH 11. Three - dimensional Geometry	To measure the shortest distance between two skew lines and verify it analytically.
	Annual Exam	Full syllabus	Every student will be asked to do at least one project based on the concepts learnt in the classroom.

SUBJECT : Physical Education(048)		
Books Prescribed :		
Month	**Chapter No. and Name**	**Activity / Project/ Practical**
April	**Unit I: Planning in Sports**	
May	**Unit II: Sports & Nutrition**	
July	**Unit II: Sports & Nutrition**	Project File (About one sport/game of choice) Demonstration of Fitness Activity Viva Voce (From Project File; Fitness)
August	**Unit V: Children & Women in Sports**	
September	Unit VIII: Biomechanics & Sports	
October	Unit III: Yoga & Lifestyle Unit IV: Physical Education & Sports for CWSN (Children With Special Needs – Divyang)	
November	Unit VII: Physiology & Injuries in Sports	Project File (Yoga and General Motor Fitness Test) Demonstration of Fitness Activity/Yoga Viva Voce (From Project File; General Motor Fitness; Yoga)
December	Unit IX: Psychology & Sports	
January	Unit X: Training in Sports	
February	Revision	

Syllabus for Assessment (Physical Education)

	Assessment	Syllabus of Assessment	Practical/Project
Term - 1	**PT-1**	**Unit I: Planning in Sports**	
	Half Yearly	**Unit I: Planning in Sports** **Unit II: Sports & Nutrition** **Unit 5 : Children and women in Sports** **Unit 8:**Biomechanics & Sports	Project File (About one sport/game of choice) Demonstration of Fitness Activity Viva Voce (From Project File; Fitness)
Term - 2	**PT-2**	Unit III: Yoga & Lifestyle	
	PT-3	Unit IV: Physical Education & Sports for CWSN (Children With Special Needs – Divyang)	
	Annual Exam	Full syllabus	Project File (Yoga and General Motor Fitness Test) Demonstration of Fitness Activity/Yoga Viva Voce (From Project File; General Motor Fitness; Yoga)