

NAVODAYA VIDYALAYA SAMITI



Split-up of Syllabus for Class VII to XII

Session: 2024-25

SPLIT UP OF SYLLABUS CLASS XII

**NAVODAYA VIDYALAYA SAMITI,
CLASS : XII SUBJECT : ENGLISH**

Unit No	Name of The Chapter/unit	Marks
1	Reading skills– <ul style="list-style-type: none"> unseen passages to assess comprehension unseen case-based passage 	20
2	Creating writing skills <ul style="list-style-type: none"> Notice Invitation Letter writing Report writing and Article writing 	20
3	Flamingo Vistas:	40
	Total	80
	Internal Assessment	20
	Grand Total	100

MONTH	NO OF DAYS	NO OF PERIODS	Main Topic and Sub-Topic to be Covered		Activities/Projects/ Practical Experiments to be Held/ Specific Assessment Tool(s) (Suggested)
			Flamingo/Vistas	Reading & Advance Writing Skills	
APRIL 2024	21	21	<ul style="list-style-type: none"> The Last Lesson (Prose) My Mother at Sixty Six (Poem) The Third Level (Prose) 	Unseen Passage. Notice and Invitation & Replies (acceptance and regrets) ASL Project-Imposed Vs self-imposed linguistic Chauvinism in the present scenario of academic life in the light of 'The Last lesson'. (Objective- focuses on the necessity to take steps to protect the regional languages from the influence of foreign language)	Reading Section: Practice in Unseen comprehension. Writing Section: Short writing task– Notice Notice for Meeting, Notice for events like Competition/Tour/ Celebration/ Annual Sports/Cultural event setc. Notice for Lost and Found. Formal/Informal Invitation and Replies up to 50 words. Invitation Practice work for invitation and Notice Students may be asked to prepare PPTs of Formal and Informal invitation.

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

MONTH	NO OF DAYS	NO OF PERIODS	Main Topic and Sub-Topic to be Covered		Activities/Projects/ Practical Experiments to be Held/ Specific Assessment Tool(s) (Suggested)
			Flamingo/Vistas	Reading & Advance Writing Skills	
				Assignment- Write a letter to the Editor highlighting/ expressing views on 'linguistic Chauvinism in the present scenario of academic life' Art Integrated Project – Based on the poem ' My Mother at Sixty Six' Assignment- Create a flow chart to expand story of 'The Third Level'/ of events in the story.	Practice of drafting Invitation for different occasions and their replies. The students may be asked to write diary entry on a day when they were not prepared for test. Assessment Tool; Presentation by the students.
PWT-I 26-29 April 2024					
JULY 2024	26	26	1. Lost Spring 2. Keeping Quiet 3. The Tiger King	I. Unseen passage to assess Comprehension, interpretation and inference. . Unseen passages ; case-based passage with verbal/ visual inputs like statistical data, charts etc.	Activities; <ul style="list-style-type: none"> Practice on Unseen passage to assess comprehension, interpretation and inference Practice on Unseen case- based passage with verbal/visual inputs like statistical data, charts etc Discussion on Health hazards of Child Labour. Poster on Child labour. Visit the School of slum areas of locality talk to the students, teachers and their parents about the facilities provided to the students. Collect the data regarding facilities and on the basis of collected data write an article on "The Plight of the Students of Slum Areas" in about 120-150 words. Collect the data regarding government and NGOs activities to save tigers in India with the help of internet and library.. Article writing on Child Labour . Discussion on Question Answer
AUGUST			<ul style="list-style-type: none"> Deep water The Rattrap 	<ul style="list-style-type: none"> Letter writing: Letter Based On Verbal 	Activities ; <ul style="list-style-type: none"> Collect letters to Editors from the

MONTH	NO OF DAYS	NO OF PERIODS	Main Topic and Sub-Topic to be Covered		Activities/Projects/ Practical Experiments to be Held/ Specific Assessment Tool(s) (Suggested)
			Flamingo/Vistas	Reading & Advance Writing Skills	
	22	22	(Prose) • A Thing Of Beauty (Poem) • Journey To The End of The Earth (Prose)	/Visual Input. Application for job with bio data or resume. Letter to the Editor giving suggestion or opinion on issues of public interest.	columns of newspapers. • Understated the tone, style and organization .students will write letters to the Editor of a leading newspaper highlighting social/ political/ current issues. Teacher will collect the letters and discuss the content, tone, style, organization coherence etc. of each letter- • Browse the internet to find out at least • 100 things of beauty and 100 things that cause suffering and pain. Enlist them and write. • Find the personalities and events from the history of sports, music dance etc. which proves that practice makes a man perfect. For example life of Sachin Tendulkar Sudha chandran etc. • Discussion on Question Answer Assessment Tool: Oral Test
PWT-II 08-10 AUGUST 2024					
SEPTEMBER 2024	17	19	1- Indigo (Prose) 2- Poets and Pancakes (Prose) 3- A Roadside Stand (Poem) The Enemy	Article /Report writing, descriptive and analytical in nature based on verbal inputs.	4) Browse internet to get more information regarding film studio history Documentary film on Gandhi ji showing contribution on Indian National Movement may be shown. Students may be asked to write the Articles based on the Verbal inputs. 5) Practice of Speaking and Listening skills. 6) Students may be asked to read the Editorial columns of newspapers. Visual input/ verbal inputs may be given for writing letter to the Editor. 7) Write a report on the village market and super markets. Write your point of you on the decision taken by Dr. Sadao Write imaginary dialogues between Dr.

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

MONTH	NO OF DAYS	NO OF PERIODS	Main Topic and Sub-Topic to be Covered		Activities/Projects/ Practical Experiments to be Held/ Specific Assessment Tool(s) (Suggested)
			Flamingo/Vistas	Reading & Advance Writing Skills	
					Sadao and his wife on whether to save American soldier or not. Assessment Tool; 1. Oral Test 2. Written class test. 3. Group discussion on the prevalent issues. 4. Discussion on Question Answer
Term I- 23 SEPTEMBER TO 04 OCTOBER 2024					
OCTOBER 2024	17	19	<ul style="list-style-type: none"> • The Interview (Prose) • Aunt Jennifer's Tigers (Poem) • Going Places (Prose) • On the face of It. 	1. Discussion and practice of Unseen passages 2. Discussion and practice on Report writing.	Collect reports from newspapers and rewrite them. Videos/ newspaper clippings may be shown to write reports following journalism expressions. Find the difference of present day women to Aunt Jennifer's as described in the poem Aunt Jennifer's tigers. Write an essay on the topic Fortune favours the Brave Discussion on the stories of minority heroes may be discussed Project work to be assigned.
NOVEMBER 2024	20	20	<ul style="list-style-type: none"> • Memories of Childhood • The Cutting of My Long Hair • We Too Are Human Beings 	1 Practice and revision of writing skills 3. ASL Practice.	The students may be given practice in writing various types of Reports. Group discussion on Condition of Women in the contemporary society, Gender Discrimination & Things that hurt disabled people Write an essay on the topic Fortune favours the Brave Discussion on the stories of minority heroes may be discussed
DEC 2024 / JAN. 2025				<ul style="list-style-type: none"> • Discussion and practice of unseen passages. Practice of Notice, Invitation, Letters and Report writing. Project work	
1 st Pre Board (4-14 December 2024) 2 nd Pre Board (20-30 January 2025)					

NAVODAYA VIDYALAYA SAMITI

CLASS: 12

SUBJECT: हिन्दी

SUBJECT CODE:302

इकाई सं	इकाई / पाठकनाम	उप-भारंक	भारंक
खंडअ (वस्तुपरकप्रश्न)			
1.	अपठितगद्यांश 7) एकअपठितगद्यांश (अधिकतम 300 शब्दोंका) (1 अंक x 10 प्रश्न) 8) दोअपठितपद्यांशोंमेंसेकोईएकपद्यांश (अधिकतम (150 शब्दोंका) (1 अंक x 5 प्रश्न)	10 5	15
2.	पाठ्यपुस्तकअभिव्यक्तिऔरमाध्यमकीइकाईएकसेपाठसंख्या 3,4 तथा 5 परआधारित • बहुवैकल्पिकप्रश्न (1 अंक x 5 प्रश्न)	5	5
3.	पाठ्यपुस्तकआरोहभाग -2 सेबहुविकल्पात्मकप्रश्न • पठितकाव्यांशपरपाँचबहुविकल्पीप्रश्न (1 अंक x 05 प्रश्न) • पठितगद्यांशपरपाँचबहुविकल्पीप्रश्न (1 अंक x 05 प्रश्न)	5 5	10
4.	पूरकपाठ्यपुस्तकवितानभाग -2 सेबहुविकल्पीप्रश्न • पठितपाठोंपरदसबहुविकल्पीप्रश्न (1 अंक x 10 प्रश्न)	10	10
खंड ब (वर्णनात्मकप्रश्न)			

5.	<p>पाठ्यपुस्तक, अभिव्यक्ति और माध्यम से सृजनात्मक लेखन और व्यावहारिक लेखन पाठ संख्या 3,4,5,11,12 तथा 13 पर आधारित।</p> <ul style="list-style-type: none"> • दिये गए चार अप्रत्याशित विषयों से किसी एक विषय पर लगभग 120 शब्दों में रचनात्मक लेखन (6 अंक x 1 प्रश्न) • कहानी का नाट्यरूपान्तरण/रेडियो नाटक/अप्रत्याशित विषयों पर लेखन पर आधारित दो प्रश्न (3 अंक x 2 प्रश्न) (विकल्प सहित) (लगभग 60 शब्दों में) (iii) पत्रकारिता और जनसंचार माध्यमों के लिए लेखन पर आधारित तीन में से दो प्रश्न (4 अंक x 2 प्रश्न) (विकल्प सहित) (लगभग 80 शब्दों में) 	6 6 8	20
6.	<p>पाठ्यपुस्तक आरोह भाग 2-</p> <ul style="list-style-type: none"> • काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 60 शब्दों में) (3 अंक x 2 प्रश्न) • काव्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 40 शब्दों में) (2 अंक x 2 प्रश्न) • गद्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 60 शब्दों में) (3 अंक x 2 प्रश्न) • गद्य खंड पर आधारित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर (लगभग 40 शब्दों में) (2 अंक x 2 प्रश्न) 	6 4 6 4	20
7.	<ul style="list-style-type: none"> • श्रवण एवं वाचन • परियोजना कार्य 	10 10	20
	कुल	100	100

प्रस्तावित पुस्तकें

- आरोह भाग -2, एन. सी. ई. आर. टी., नई दिल्ली द्वारा प्रकाशित
- वितान भाग - 2, एन. सी. ई. आर. टी., नई दिल्ली द्वारा प्रकाशित
- अभिव्यक्ति और माध्यम एन .सी. ई. आर. टी., नई दिल्ली द्वारा प्रकाशित

हटाए गए पाठ :

गद्य खंड: सहर्ष स्वीकारा है।, गजल (फिराक गोरखपुरी),

पद्य खंड: चालीं चाप्लिन यानी हम सब, नमक । वितान : ऐन फ्रैंक – डायरी के पन्ने ।

(सी बी एस ई पाठ्यक्रम 2023-24 पर आधारित)

पाठ्यक्रम विभाजन – सत्र 2024-25 (हिंदी आधार – कक्षा बारहवीं)

माह	दिन	कालांश	पाठ / उप-पाठ का नाम			क्रिया – कलाप / परियोजना कार्य
			आरोह भाग – एक	वितान भाग – एक	अभिव्यक्ति और माध्यम/ रचनात्मक लेखन	
अप्रैल, 2024	24	28	गद्य खंड: भक्तिन – महादेवी वर्मा पद्य खंड: <ul style="list-style-type: none"> ○ आत्मपरिचय ○ एक गीत – हरिवंशराय बच्चन 	सिल्वर वेडिंग - मनोहर श्याम जोशी	विभिन्न माध्यमों के लिए लेखन	पीढ़ी का अंतराल - वादविवाद
प्रथम इकाई परीक्षा						
जुलाई, 2024	26	30	गद्य खंड: V) बाजार दर्शन – जैनेन्द्र कुमार VI) काले मेघा पानी दे- धर्मवीर भारती पद्य खंड : <ul style="list-style-type: none"> ● पतंग - आलोक धन्वा ● कविता के बहाने – कुंवर नारायण ● बात सीधी थी - कुंवर नारायण 	सिल्वर वेडिंग - मनोहर श्याम जोशी	अपठित गद्यांश अपठित पद्यांश	उपभोक्तावादी संस्कृति एवं उसके समाज पर दुष्प्रभाव -परिचर्चा 'पानी बचाओ' विषय से जुड़े विज्ञापनों का संकलन।
अगस्त 2024	25	28	गद्य खंड: <ul style="list-style-type: none"> ● पहलवान की ढोलक – - फणीश्वरनाथ रेणु पद्य खंड: <ul style="list-style-type: none"> vi) कैमरे में बंद अपाहिज - रघुवीर सहाय vii) उषा - शमशेर बहादुर सिंह 	जूझ - आनंद यादव	कैसे करें कहानी का नाट्य रूपांतरण, कैसे बनता है रेडियो नाटक, नए और अप्रत्याशित विषयों पर लेखन	प्राचीन काल एवं आधुनिक काल के खेलों को सूचीबद्ध करना।
द्वितीय इकाई परीक्षा						

सितंबर, 2024	17	19	<p>पद्य खंड:</p> <ul style="list-style-type: none"> बादल राग - सूर्यकांत त्रिपाठी निराला कवितावली - तुलसीदास लक्ष्मण मूर्छा एवं राम का विलाप-तुलसीदास <p>गद्य खंड:</p> <ul style="list-style-type: none"> शिरीष के फूल - हजारी प्रसाद द्विवेदी 	अतीत में दबे पांव – ओम थानवी	पुनरावृत्ति	तुलसीदास के साहित्य में प्रयुक्त छंद व काव्य रूपों की सूची बनाना। प्रथम सत्रांक परीक्षा
अक्तूबर, 2024	21	24	<p>पद्य खंड:</p> <ul style="list-style-type: none"> रुबाइयां- फिराक गोरखपुरी छोटा मेरा खेत-उमाशंकर जोशी <p>पुनरावर्तन</p>		पत्रकारीय लेखन के विभिन्न रूप और लेखन प्रक्रिया।	विद्यार्थियों द्वारा देखे गए किसी ऐतिहासिक स्थल की परिचर्चा।
नवंबर, 2024	20	23	<p>गद्य खंड:</p> <ul style="list-style-type: none"> श्रम विभाजन और जाति प्रथा मेरी कल्पना का आदर्श समाज-भीमराव अम्बेडकर <p>पद्य खंड:</p> <p>बगुलों के पंख-उमाशंकर जोशी</p>		विशेष लेखन - स्वरूप और प्रकार।	अंबेडकर की कल्पना में आदर्श समाज -- वादविवाद।
दिसंबर 2024			पुनरावृत्ति प्री-बोर्ड प्रथम			
जनवरी 2025			प्रीबोर्ड द्वितीय			

NAVODAYA VIDYALAYA SAMIT
Split up of syllabus 2024-25

CLASS: XII

SUBJECT: MATHEMATICS

UNIT	Name of The Units	No .of Periods	Marks
I	RELATIONS AND FUNCTIONS	30	08
II	ALGEBRA	50	10
III	CALCULUS	80	35
IV	VECTORS & THREE-DIMENSIONAL GEOMETRY	30	14
V	LINEAR PROGRAMMING	20	05
VI	PROBABILITY	30	08
	TOTAL	240	80
	Internal Assessment (20Marks)		
	A.Unit Tests (Best 2 out of 3 tests conducted) (10 Marks)		
	B. Mathematics Activities (10 Marks)		
	1.The activities performed by the student throughout the year end record keeping (05 Marks)		20
	2.Assessment of the activity performed during the year end test (03 Marks)		
	3.Viva-voce (02 Marks)		
	Grand Total		100

SPLIT-UP SYLLABUS

MONTH	No. of Days	No. of Periods	Main topic and sub-topics to be covered	Activities/ Projects/Practical Experiments to be Held/ Specific Assessment Tool(s) (Suggested)
APRIL 2024		25	<p>UNITII ALGEBRA</p> <p>MATRICES: Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operations 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). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).</p>	<p>Activity -1 Word problems based on matrices. Formatting of matrix. Finding the solution by using matrix method.</p> <p style="text-align: right;">UNIT TEST-1 FROM (26-04-24 TO 29-04—24)</p>
	22	<p>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.</p>		
	25			

MONTH	No. of Days	No. of Periods	Main topic and sub-topics to be covered	Activities/ Projects/Practical Experiments to be Held/ Specific Assessment Tool(s) (Suggested)
JULY, 2024	26	15	UNIT I (RELATIONS AND FUNCTIONS) RELATIONS AND FUNCTIONS Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.	Activity -2 To demonstrate a function which is one - one not onto Activity -3 To explore the principal value of the function $\sin^{-1}x$ using a unit circle
		15	INVERSE TRIGONOMETRIC FUNCTIONS: Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions.	
		20	UNIT III-CALCULUS CONTINUITY AND DIFFERENTIABILITY: Continuity and differentiability, chain rule, derivatives of inverse trigonometric functions like $\sin^{-1}x$, $\cos^{-1}x$ 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.	
AUGUST 2024	22	10	APPLICATIONS OF DERIVATIVES: Applications of derivatives: rate of change of quantities, 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 real-life situations). INTEGRALS: 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. $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$ $\int \frac{px + q}{ax^2 + bx + c} dx, \int \frac{px + q}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2} dx, \int \sqrt{x^2 - a^2} dx$ $\int \sqrt{ax^2 + bx + c} dx, \int (px + q)\sqrt{ax^2 + bx + c} dx$ Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.	Activity -4 To find analytically the limit of function $f(x)$ at $x=c$ and also to check the continuity of the function at that point. Activity -5 To Understand the concept of decreasing and increasing functions Activity -6 To understand the concepts of local minima, local maxima and point of inflection
UNIT TEST-2 FROM (08-08-23 TO 10-08-23)				

MONTH	No. of Days	No. of Periods	Main topic and sub-topics to be covered	Activities/ Projects/Practical Experiments to be Held/ Specific Assessment Tool(s) (Suggested)
SEPTEMBER 2024	16	15	APPLICATIONS OF THE INTEGRALS: Applications in finding the area under simple curves, especially lines, circles/parabolas/ellipses (in standard form only).	Activity -7 To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.
		15	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 $\frac{dy}{dx}+py=q$, where p and q are functions of x or constants. $\frac{dx}{dy}+px=q$, where p and q are functions of y or constants.	
TERM I EXAMINATION (23-09-24 TO 03-10-24) UPTO SEPTEMBER PORTION				
OCTOBER 2024	18	10	UNIT V 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).	Activity -8 To verify geometrically that $\overline{c} \times (\overline{a} + \overline{b}) = \overline{c} \times \overline{a} + \overline{c} \times \overline{b}$
	16	15	UNIT:IV VECTOR ALGEBRA: 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.	

MONTH	No. of Days	No. of Periods	Main topic and sub-topics to be covered	Activities/ Projects/Practical Experiments to be Held/ Specific Assessment Tool(s) (Suggested)
NOV-24	20	15 30	<p>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.</p> <p>PROBABILITY: Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable.</p>	<p>Activity -9 To demonstrate the shortest distance between two lines.</p> <p>Activity -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 dice.</p>
DECEMBER2024/ JANUARY 2025			<p>REVISION (PRACTICE PAPERS) PRE-BOARD I AND II CBSE EXAMS AS PER THE SCHEDULE</p>	

Prescribed Books:

- Mathematics Part I - Textbook for Class XII, NCERT Publication
- Mathematics Part II - Textbook for Class XII, NCERT Publication
- Mathematics Exemplar Problem for Class XII, Published by NCERT
- Mathematics Lab Manual class XII, published by NCERT
<http://www.ncert.nic.in/exemplar/labmanuals.html>

Note:

The activities listed above are suggestive only. Teachers are advised to refer the Lab Manual for class XII, published by CBSE. Throughout the year any 10 activities shall be performed by the student from the activities given in the Lab Manual.

NAVODAYA VIDYALAYA SAMITI

CLASS: XII

SUBJECT: PHYSICS

SUBJECT CODE: 042

UnitNo	NameofTheChapter/unit	Periods	Marks
1	Electrostatics	26	16
	Chapter-1:ElectricchargesandFields		
	Chapter-2:ElectrostaticPotentialandCapacitance		
2	CurrentElectricity	18	
	Chapter-3:CurrentElectricity		
3	MagneticeffectsofcurrentandMagnetism	25	17
	Chapter-4:MovingChargesandMagnetism		
	Chapter-5:MagnetismandMatter		
4	ElectromagneticInductionandAlternatingCurrents	24	17
	Chapter-6:ElectromagneticInduction		
	Chapter-7:AlternatingCurrents		
5	Electromagneticwaves	04	18
	Chapter-8:ElectromagneticWaves		
6	Optics	30	12
	Chapter-9:RayOpticsandOpticalInstruments		
	Chapter-10:WaveOptics		
7	DualNatureofRadiationandMatter	8	7
	Chapter-11:DualNatureofRadiationandMatter		
8	AtomsandNuclei	15	30
	Chapter-12:Atoms		
	Chapter-13:Nuclei		
9	ElectronicDevices	10	7
	Chapter-14:semiconductor Electronics:Materials,Devicesandsimplecircuits		
	Total	160	70
	Practical/InternalAssessment		30
	GrandTotal		100

Month	No. of Days	No. of Periods	Weightage of Marks for the Unit/Chapter	Units/Subunits/ Topics/Chapters to be Covered	Details of Activity/Practical/ Projects to be given	Unit Tests /Formative Tests/ Assignment
APRIL 2024	22	26	16	<p>Unit I: Electrostatics:</p> <p>Chapter–1: Electric Charges and Fields 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).</p> <p>Chapter–2: Electrostatic Potential and Capacitance 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 polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor (no derivation, formulae only)</p>	<p>Experiments : 1&2 (1. Determine Resistivity of wires using V-I curve 2. Determine the Resistance of a given wire using Meter bridge)</p> <p>Activity:1 To assemble the house hold circuit comprising 3 bulbs, 3 switches , a fuse and a power source</p>	<p>Unit Test-1 /Assignment - 1 (Related to Electrostatics)</p>

Month	No. of Days	No. of Periods	Weightage of Marks for the Unit/Chapter	Units/Subunits/ Topics/Chapters to be Covered	Details of Activity/Practical/ Projects to be given	Unit Tests /Formative Tests/ Assignment
JULY 2024	24	18 12	17	<p>UnitII: CurrentElectricity:</p> <p>Chapter–3:CurrentElectricity</p> <p>Electric current, flow of electric charges in a metallicconductor, drift velocity, mobility and their relationwith electric current; Ohm's law, V-I characteristics(linear and non-linear), electrical energy and power,electricalresistivityandconductivity,temperaturedependenceofresistance, Internalresistanceofacell,potential difference and emf of a cell, combination ofcellsinseriesandinparallel,Kirchhoff's rules,Wheatstonebridge</p> <p>Unit III: Magnetic Effects of Current and Magnetism</p> <p>Chapter–4: Moving Charges and Magnetism 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 solenoid (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields. Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere.</p>	<p>Experiment s: 3&4</p> <p>3. Verify the laws of combination of R's in series or Parallel using Meter bridge</p> <p>4. Determine the resistance of a galvanometer by half deflection method and to find its figure of merit</p> <p>Activity:2 To study the variation of potential drop with length of a wire for a steady current</p>	<p>Assignment-2 Based on Current Electricity</p>

Month	No. of Days	No. of Periods	Weightage of Marks for the Unit/Chapter	Units/Subunits/ Topics/Chapters to be Covered	Details of Activity/Practical/ Projects to be given	Unit Tests /Formative Tests/ Assignment
AUGUST 2024	25	13		Torque experienced by a current loop in uniform magnetic field; Current loop as a magnetic dipole and its magnetic dipole moment, moving coil galvanometer, its current sensitivity and conversion to ammeter and voltmeter. Chapter-5: Magnetism and Matter Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field qualitative treatment only), magnetic field lines. Magnetic properties of materials- Para-, dia- and ferro - magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties	<p>Experiment s: 5&6 (5. Find the refractive index of the material of a glass slab using travelling microscope 6. Find the focal length of a concave mirror u. v method)</p> <p>Activity: 3&4 To measure the resistance ,voltage (AC/DC/), Current (AC/DC) and check continuity of a given circuit using multi meter To identify a diode , LED, a resistor and a capacitor from a mixed collection of such items .</p>	Unit Test-2 Assignment-3 (Based on Magnetism)
		18		<p>Chapter-5: Magnetism and Matter Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines. Magnetic properties of Materials- Para-, dia- and ferro - magnetic substances with examples, Magnetization of materials, effect of Temperature on magnetic properties</p>		

Month	No. of Days	No. of Periods	Weightage of Marks for the Unit/Chapter	Units/Subunits/ Topics/Chapters to be Covered	Details of Activity/Practical/ Projects to be given	Unit Tests /Formative Tests/ Assignment
SEPTEMBER 2024	24	6 4 20	18	<p>power in AC circuits, power factor, wattles current. AC generator, Transformer</p> <p>Unit V: Electromagnetic waves Chapter–8: Electromagnetic Waves Basic idea of displacement Current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only) Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.</p> <p>Unit VI: Optics Chapter– 9: Ray Optics and Optical Instruments Ray Optics: Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism. Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers</p>	<p>Experiment: 7&8</p> <p>7. Find the focal length of a convex lens by plotting $u-v$ or $1/u - 1/v$ graph</p> <p>8. Find the focal length of a concave lens using convex lens – contact method</p> <p>(As per the availability of apparatus teachers can arrange other experiments from the list given by CBSE)</p> <p>Activities: 5 Observe the diffraction of a single slit</p>	<p>Term Test-1</p> <p>Assignment -4: Based on optics</p>

Month	No. of Days	No. of Periods	Weightage of Marks for the Unit/Chapter	Units/Subunits/ Topics/Chapters to be Covered	Details of Activity/Practical/ Projects to be given	Unit Tests /Formative Tests/ Assignment
OCTOBER 2024	16	10 8 2	12	<p>Chapter–10: 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 (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima (qualitative treatment only).</p> <p>Unit VII: Dual Nature of Radiation and Matter Chapter–11: Dualnatureofradiation: Photoelectric effect, Hertz and Lenard’s observations; Einstein’s photoelectric equation-particle nature of light. Experimental study of photoelectric effect. Matter waves-wavenature of particles, de-Broglie relation.</p> <p>Unit VIII: Atoms And Nuclei Chapter–12: Atoms: Alpha-particles scattering experiment; Rutherford’s model of atom;</p>	<p>Activity:6 Observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab</p>	

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

Month	No. of Days	No. of Periods	Weightage of Marks for the Unit/Chapter	Units/Subunits/ Topics/Chapters to be Covered	Details of Activity/Practical/ Projects to be given	Unit Tests /Formative Tests/ Assignment
NOVEMBER 2024	20	13	07	<p>Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in this orbit, of hydrogen line spectra (qualitative treatment only).</p> <p>Chapter– 13: Nuclei: Composition and size of nucleus, nuclear force Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.</p> <p>Unit IX: Electronic Devices</p> <p>Chapter– 14: Semiconductor Electronics: Materials,</p> <p>Devices and Simple Circuits: Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction Semiconductor diode-I-V characteristics in forward and reverse bias, application of junction diode–diode as a rectifier.</p>	<p>Project work : From the given list of CBSE</p> <p>Completion of left over practicals & Activities</p>	
December 2024				REVISION & PRE BOARD -1	Completion of left over practicals	
January/ Feb 2025				CBSE Practical and PRE BOARD -2		
February-March 2025				CBSE Examinations 2025		

PRACTICALS

Total Periods 6

The record to be submitted by the students at the time of their annual examination has to include:

8. Record of at least 8 Experiments [with 4 from each section], to be performed by the students.
9. Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.
10. The Report of the project carried out by the students.

EVALUATION SCHEME

MAX. MARKS: 30

Time 3 hours

Two experiments one from each section	7+7 Marks
Practical record [experiments and activities]	5 Marks
One activity from any section	3 Marks
Investigatory Project	3 Marks
Viva on experiments, activities and project	5 Marks
Total	30 marks

SECTION – A

Experiments

- a. To determine resistivity of two / three wires by plotting a graph for potential difference versus current.
- b. To find resistance of a given wire / standard resistor using metre bridge.
- c. To verify the laws of combination (series) of resistances using a metre bridge.
OR
To verify the laws of combination (parallel) of resistances using a metre bridge
To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
- d. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.
OR
To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.
- e. To find the frequency of AC mains with a Sono meter.

Activities

11. To measure the resistance and impedance of an inductor with or without iron core.
12. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multi meter.
13. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
14. To assemble the components of a given electrical circuit.
15. To study the variation in potential drop with length of a wire for a steady current.
16. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order.

and correct the circuit and also the circuit diagram.

SECTION-B

Experiments

17. To find the value of v for different values of u in case of a concave mirror and to find the focal length.
18. To find the focal length of a convex mirror, using a convex lens.
19. To find the focal length of a convex lens by plotting graphs between u and v or between $1/u$ and $1/v$.
20. To find the focal length of a concave lens, using a convex lens.
21. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.
22. To determine refractive index of a glass slab using a travelling microscope.
23. To find the refractive index of a liquid using a convex lens and a plane mirror.
24. To find the refractive index of a liquid using a concave mirror and a plane mirror.
25. To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.

Activities

26. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
27. Use of a multi meter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.
28. To study the effect of intensity of light (by varying distance of the source) on an LDR.
29. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
30. To observe diffraction of light due to a thin slit.
31. To study the nature and size of the image formed by a (i) convex lens, or (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
32. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

Suggested Investigatory Projects

1. To study various factors on which the internal resistance/EMF of a cell depends.
2. To study the variations in current flowing in a circuit containing an LDR because of a variation in
 - a. the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance).
 - b. the distance of an incandescent lamp (of fixed power) used to 'illuminate' the LDR.
3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, a equi convex lens (made from a glass of known refractive index) and an adjustable object needle.
4. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.
5. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.
6. To estimate the charge induced on each one of the two identical Styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.
7. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.
8. To study the earth's magnetic field using a compass needle - bar magnet by plotting

magnetic field lines and tangent galvanometer.

Practical Examination for Visually Impaired Students of Classes XII Evaluation Scheme
Time 2 hours Max. Marks: 30

Identification/Familiarity with the apparatus	5 marks
Written test (based on given/prescribed practicals)	10 marks
Practical Record	5 marks
Viva	10 marks
Total	30 marks

General Guidelines

1. The practical examination will be of two-hour duration.
2. A separate list of ten experiments is included here.
3. The written examination in practical for these students will be conducted at the time of practical examination of all other students.
4. The written test will be of 30 minutes duration.
5. The question paper given to the students should be legibly typed. It should contain a total of 15 practical skill based very short answer type questions. A student would be required to answer any 10 questions.
6. A writer may be allowed to such students as per CBSE examination rules.
7. All questions included in the question papers should be related to the listed practical. Every question should require about two minutes to be answered.
8. These students are also required to maintain a practical file. A student is expected to record at least five of the listed experiments as per the specific instructions for each subject.
9. These practical should be duly checked and signed by the internal examiner.
10. The format of writing any experiment in the practical file should include aim, apparatus required, simple theory, procedure, related practical skills, precautions etc.
11. Questions may be generated jointly by the external/internal examiners and used for assessment.
12. The viva questions may include questions based on basic theory/principle/concept, apparatus/materials/chemicals required, procedure, precautions, sources of error etc.

Class XII

A. Items for Identification/ familiarity with the apparatus for assessment in practical (All experiments)
Meterscale, general shape of the voltmeter/ammeter, battery/power supply, connecting wires, standard resistances, connecting wires, voltmeter/ammeter, meter bridge, screw gauge, jockey Galvanometer Resistance Box, standard Resistance, connecting wires, Potentiometer, jockey, Galvanometer, Leclanche cell, Daniell cell [simple distinction between the two vis-à-vis their outer (glass and copper) containers], rheostat connecting wires, Galvanometer, resistance box, Plug-in and tapping keys, connecting wires battery/power supply, Diode, Resistor (Wire-wound or carbon ones with two wires connected to two ends), capacitors (of two types), Inductors, Simple electric/electronic bell, battery/power supply, Plug-in and tapping keys Convex lens, concave lens, convex mirror, concave mirror, Core/hollow wooden cylinder, insulated wire ferromagnetic rod, Transformer core, insulated wire.

List of Practicals

- To determine the resistance per cm of a given wire by plotting a graph between voltage and current.

- To verify the laws of combination (series/parallel combination) of resistances by Ohm's law.
- To find the resistance of a given wire/standard resistor using a meter bridge.
- To determine the resistance of a galvanometer by half deflection method.
- To identify a resistor, capacitor, inductor and diode from a mixed collection of such items.
- To observe the difference between
 - a convex lens and a concave lens
 - a convex mirror and a concave mirror and to estimate the likely difference between the power of two given convex/concave lenses.
- To design an inductor coil and to know the effect of
 - change in the number of turns
 - Introduction of ferromagnetic material as its core material on the inductance of the coil.
- To design a (i) step up (ii) step down transformer on a given core and know the relation between its input and output voltages.

Note: The above practicals may be carried out in an experiential manner rather than recording observations.

Prescribed Books:

1. Physics, Class XI, Part-I and II, Published by NCERT.
2. Physics, Class XII, Part-I and II, Published by NCERT.
3. Laboratory Manual of Physics for class XI Published by NCERT.
4. The list of other related books and manuals brought out by NCERT (consider multimedia also).

Note: The content indicated in NCERT textbooks as excluded for the year 2024-25 is not to be tested by schools and will not be assessed in the Board examinations 2024-25.

NAVODAYA VIDYALAYA SAMITI

CLASS: XII

SUBJECT: Chemistry

SUBJECT CODE: 043

Unit No	Name of The Chapter/ unit	Marks	Periods
1	Solutions	7	15
2	Electrochemistry	9	18
3	Chemical kinetics	7	15
4	d and f block elements	7	18
5	Coordination compounds	7	18
6	Haloalkanes and Haloarenes	6	15
7	Alcohols, Phenols and Ethers	6	14
8	Aldehydes, Ketones and Carboxylic acids	8	15
9	Amines	6	14
10	Biomolecules	7	18
	Total	70	160
	Practical Assessment	30	--
	Grand Total	100	--

PRACTICALS

Time Allowed: 03 Hours

Max.Marks:30

Evaluation Scheme	Marks
I. Volumetric Analysis	08 Marks
II. Salt Analysis	08 Marks
III. Content based experiment	06 Marks
IV. Record + Viva	04 Marks
V. Project + Viva	04 Marks
Total	30 Marks

MONTH	NO OF DAYS	NO. OF PERIODS	Weightage of Marks for the Unit/ Chapter	Main Topic and Sub-Topics to be Covered	Activities/Projects/ Practical Experiments to be Held/ Specific Assessment Tool(s) (Suggested)	TESTS Periodic / Term /Pre-Board/ Revision/ Annual Exam
APRIL	26	15 7 18 9		<p>Unit I: Solutions 15 Periods Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.</p> <p>Unit II: Electrochemistry 18 Periods Redox reactions, 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, 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, fuel cells, corrosion.</p>	<p>1. Determination of concentration/ molarity of KMnO_4 solution by titrating it against a standard solution of: (a) Oxalic acid, (b) Ferrous Ammonium Sulphate (Students will be required to prepare standard solutions by weighing themselves).</p> <p>2. 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.</p> <p>3. (a) Preparation of one lyophilic and one lyophobic sol Lyophilic sol - starch, egg albumin and gum Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.</p>	<p>PWT 1 / UT 1 (26-29 APRIL 2024)</p>

JULY	24	15	7	<p>Unit III:Chemical Kinetics15 Periods 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.</p>	<p>4 (a) Effect of concentration and temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid. (b) Study of reaction rates of any one of the following: (i) Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentrations of Iodide ions. (ii) Reaction between Potassium Iodate, (KIO₃) and Sodium Sulphite: (Na₂SO₃) using starch solution as an indicator (clock reaction).</p>
		18		<p>Unit IV: d and f Block Elements 18 Periods 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 K₂Cr₂O₇ and KMnO₄. Lanthanoids – Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences. Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids.</p>	<p>5. Qualitative analysis Determination of one anion and one cation in a given salt (03 salts per month or more) Cation: Pb²⁺, Cu²⁺, As³⁺, Al³⁺, Fe³⁺, Mn²⁺, Zn²⁺, Ni²⁺, Ca²⁺, Sr²⁺, Ba²⁺, Mg²⁺, NH₄⁺ Anions: CO₃²⁻, S²⁻, SO₃²⁻, NO₂⁻, SO₄²⁻, Cl⁻, Br⁻, I⁻, PO₄³⁻, C₂O₄²⁻, CH₃COO⁻, NO₃⁻ (Note: Insoluble salts excluded)</p>
			7		

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

AUGUST	27	18	07	<p>Unit V: Coordination Compounds 18 Periods 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, the importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).</p>	<p>6. Preparation of Inorganic Compounds Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum. Preparation of Potassium Ferric Oxalate.</p>	<p>PWT 2 / UT 2 (8-10 AUGUST 2024)</p>
		15	06	<p>Unit VI: Haloalkanes and Haloarenes. 15 Periods Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, optical rotation mechanism of substitution reactions. Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). Uses and environmental effects of -dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.</p>		

SEPTEMBER	24	14	06	<p>Unit VII: Alcohols, Phenols and Ethers 14 Periods</p> <p>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.</p> <p>Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.</p> <p>Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.</p>	<p>8. Tests for the functional groups present in organic compounds: Carboxylic and amino (Primary) groups.</p> <p>9. Chromatography (a) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values. (b) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in Rf values to be provided).</p>	<p>Revision & Exams- Term I 23 Sep- 04 Oct 2024</p>
		15	08	<p>Unit VIII: Aldehydes, Ketones and Carboxylic Acids 15 Periods</p> <p>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.</p> <p>Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.</p>		
OCTOBER	21	14	06	<p>Unit IX: Amines 14 Periods</p> <p>Amines: Nomenclature, classification, structure, methods of preparation, physical properties and Identification.</p> <p>Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.</p>	<p>10. Any one of the following experiments:</p> <p>(a) Enthalpy of dissolution of copper sulphate or potassium nitrate.</p> <p>(b) Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH).</p> <p>(c) Determination of enthalpy change during interaction (Hydrogen bond formation) between acetone and chloroform.</p>	

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

NOVEMBER	15	18	7	<p>Unit X: Biomolecules Carbohydrates 18 Periods 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.</p>	11. Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given foodstuffs.	
DECEMBER	24			REVISION & EXAMS	Investigatory Project	Pre-Board-I 04-14 Dec 2024
JAN	31	-		REVISION & EXAMS	-----	Pre-Board II 20-30 Jan 2025
FEB	28	-		REVISION & Annual Examinations	-----	
FEB & MARCH	31			Annual Examinations		

Art integrated learning must be invariably adopted for clarifying scientific concepts.

NAVODAYA VIDYALAYA SAMITI

CLASS: XII (SCI)

SUBJECT: BIOLOGY

SUBJECT CODE: 044

The present curriculum provides the students with updated concepts along with an extended exposure to contemporary areas of the subject. The curriculum also aims at emphasizing the underlying principles that are common to animals, plants and microorganisms as well as highlighting the relationship of Biology with other areas of knowledge. The format allows a simple, clear, sequential flow of concepts. It relates the study of biology to real life through the developments in use of technology. It links the discoveries and innovations in biology to everyday life such as environment, industry, health and agriculture. The updated curriculum also focuses on understanding and application of scientific principles, while ensuring that ample opportunities and scope for learning and appreciating basic concepts continue to be available within its framework. The prescribed syllabus is expected to:

- Promote understanding of basic principles of Biology
- Encourage learning of emerging knowledge and its relevance to individual and society
- Promote rational/scientific attitude towards issues related to population, environment and development.
- Enhance awareness about environmental issues, problems and their appropriate solutions.
- Create awareness amongst the learners about diversity in the living organisms and developing respect for other living beings.
- Appreciate that the most complex biological phenomena are built on essentially simple processes.

It is expected that the students would get an exposure to various branches of Biology in the curriculum in a more contextual and systematic manner as they study its various units.

COURSE STRUCTURE CLASS XII(2024-25)(THEORY)

Time:3 Hours

Max.Marks:70

Unit No	Title	No.ofPeriods	Marks
VI	Reproduction	30	16
VII	GeneticsandEvolution	40	20
VIII	BiologyandHumanWelfare	30	12
IX	BiotechnologyanditsApplications	30	12
X	EcologyandEnvironment	30	10

		Total		160	70
MONTH	NOOF DAYS	NOOF PERIODS	Main Topic and Sub-Topics to beCovered	Activities/Projects/ PracticalExperimentstobe Held	
April-2024	21	21+9 =30	<p>UnitVI-Reproduction: SexualReproductioninFlowering Plants Sexualreproduction in flowering plantFlower structure; Development offemale and female gametophytes;Pollination - types, agencies andexamples; out breeding devices;pollen-pistil interaction; Doublefertilization;postfertilization events- Developmentofendospermand embryo, development of seedand formation of fruit; specialmodes- apomixis, parthenocarpy,polyembryony;Significanceofseeddispersalandfruitformation.</p> <p>HumanReproduction: Male and female reproductivesystems; microscopic anatomy oftestis and ovary; gametogenesis spermatogenesis and oogenesis;menstrual cycle; fertilisation,embryodevelopment uptoblastocystformation,implantation;pregnancy and placenta formation(elementary idea); parturition(elementary idea); lactation(elementaryidea).</p> <p>Reproductivehealth: Need for reproductive health andpreventionofSexuallyTransmittedDiseases (STDs); birth control - need and methods, contraceptionandmedical terminationofpregnancy (MTP);</p>	<p>Experiments:</p> <ol style="list-style-type: none"> 1. Study of pollen germination on acavityslide <p>Spotting:</p> <ol style="list-style-type: none"> 1. Studyofflowersadaptedtopollination 2. ExerciseonControlledpollination 3. Pollen germination on stigmathroughapermanentslideorscanningelectron micrograph. Olabsvideo(https://youtu.be/4wx3d02eib4) 4. Studyandidentifystagesofgamete development i.e. T.S. of testis, T.S. ofovarythroughpermanentslides. Olabssimulationhttps://bit.ly/3YUWOaU 5. Studyofmeiosissthroughpermanentslides 6. Study of blastula throughpermanentslideOlabssimulation https://bit.ly/3S04eaBMay 	

			amniocentesis;infertility and assisted reproductivetechnologies - IVF, ZIFT, GIFT(elementary idea for generalawareness).	
			UT 1	
JULY-2024	25	25+ 12= 37	<p>Unit VII-Genetics and Evolution Heredity and variation: Mendelian inheritance; deviationsfrom Mendelism – incompletdominance,co-dominance. multipleallelesandinheritanceof bloodgroups,pleiotropy;elementaryidea ofpolygenicinheritance; chromosome theory ofinheritance;chromosomesandgenes;Sexdetermination- inhumans,birdsandhoneybee;linkageandcrossingover;sexlinkedinheritance- haemophilia,colourblindness;Mendelian disorders in humans - thalassemia;chromosomal disorders in humans;Down'ssyndrome,Turner'sand Haemophilia,colourblindness,Mendelian disorders in humans- thalassemia,chromosomal disorders in humans, Down's syndrome, Turner's syndrome and Klinefelter'ssyndromes.</p>	<p>Experiments: 2. Prepareatemporarymountofonionroot tip to study mitosis. Olabs video https://youtu.be/N-</p> <p>Spotting: 7. StudyofMendelianinheritance using seeds of different colours of any plant Olabs simulation https://bit.ly/3S4laMX</p> <p>8. Study of prepared pedigree charts.Olabs ZZsimulationhttps://bit.ly/3k5b</p> <p>KV1</p>

		<p>Molecular basis of Inheritance 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, Human and rice genome projects; DNA fingerprinting.</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">August - 2024</p>	<p style="text-align: center;">25</p>	<p>UT-2</p> <p>Evolution origin of life; biological evolution and evidences for biological evolution (palaeontology, comparative anatomy, embryology and molecular evidence); 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</p> <p>Unit VIII - Biology and Human welfare Health and disease</p> <p>Pathogens parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology - vaccines; cancer, HIV and AIDS; Adolescence - drug and alcohol abuse.</p> <p>Microbes in human welfare Microbes in food processing, industrial production, sewage treatment, energy generation and microbes as bio-control agents and bio-fertilizers. Antibiotics;</p>	<p>Spotting: Common disease-causing organisms like <i>Ascaris</i>, <i>Entamoeba</i>, <i>Plasmodium</i>, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause.</p> <p>Experiments: 3. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.</p>

			production and judicious use.	
September-2024	18	18+7=25	<p>Unit IX- Biotechnology and its applications Biotechnology - Principles and Processes. Genetic Engineering (Recombinant DNA Technology).</p> <p>Biotechnology and its Applications</p> <p>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, biopiracy and patents.</p>	
MID TERM EXAMINATIONS				
October-2024	22	22+9=31	<p>Unit X- Ecology and Environment Organisms and environment Population interactions- mutualism, competition, predation, parasitism; population attributes- growth, birth rate and death rate, age distribution. (Topics excluded: Organism and its Environment, Major Abiotic Factors, Response to Abiotic Factors, Adaptations).</p> <p>Ecosystem: Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy (Topics excluded: Ecological Succession and Nutrient Cycles)</p>	<p>Experiments:</p> <p>4. Study of plant population density by quadrat method. O labs video https://youtu.be/FlwR-EGE9zA</p> <p>Study of plant population frequency by quadrat method. O labs video https://youtu.be/uBYqBNy_ojMQ</p> <p>Spotting:</p> <p>11. Models specimens showing symbolic association in root nodules of leguminous plants, Cuscuta on host, lichens.</p>
			Investigatory Project	

November-2024		20	<p>Biodiversity and its Conservation Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.</p> <p>Revision of Difficult Topics Preparation for Pre-Board Examination-I</p>	<p>Submission 1. Record 2. Investigatory Project</p>
			REVISION AND PREPARATION OF CBSE EXAM	

XI BIOLOGY PRACTICALS

A. List of Experiments

1. Prepare a temporary mount to observe pollen germination.
2. Study the plant population density by quadrat method.
3. Study the plant population frequency by quadrat method.
4. Prepare a temporary mount of onion root tip to study mitosis.
5. Isolate DNA from available plant materials such as spinach, green pea seeds, papaya, etc.

B. Study and observe the following (Spotting)

1. Flowers adapted to pollination by different agencies (wind, insects, birds).
2. Pollen germination on stigma through a permanent slide or scanning electron micrograph.
3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
4. Meiosis in onion bud cell or grasshopper testis through permanent slides.
5. T.S. of blastula through permanent slides (Mammalian).
6. Mendelian inheritance using seeds of different colour/sizes of any plant.
7. 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.
8. Controlled pollination-emasculatation, tagging and bagging.
9. Common disease-causing organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause.

PRACTICALS

Time allowed: 3 Hours

Max. Marks: 30

Evaluation Scheme	Marks
One Major Experiment 5	05
One Minor Experiment 2 & 3	04
Slide Preparation 1 & 4	05
Spotting	07
Practical Record + Viva Voce	04
Investigatory Project and its Project Record + Viva Voce Credit (to the students' work over the academic session may be given)	05
Total	30

Question Paper Design (Theory)

2023-24 Class XII Biology (044)

Competencies

Demonstrate Knowledge and Understanding	50%
Application of Knowledge/Concepts	30%
Analyse, Evaluate and Create	20%

Note:

- s) Typology of questions: VSA including MCQs, Assertion-Reasoning type questions; SA; LA-I; LA-II; Source-based/Case-based/Passage-based/Integrate assessment questions.
- t) An internal choice of approximately 33% would be provided.

Suggestive verbs for various competencies

- Demonstrate, Knowledge and Understanding
- State, name, list, identify, define, suggest, describe, outline, summarize, etc.

- Application of Knowledge/Concepts
- Calculate, illustrate, show, adapt, explain, distinguish, etc.
- Analyze, Evaluate and Create
- Interpret, analyse, compare, contrast, examine, evaluate, discuss, construct, etc.

Online Resources for Theory and Practicals

- h) Virtual Labs <https://diksha.gov.in/virtuallabs.html>
- i) O Labs <https://www.olabs.edu.in/>
- j) Virtual Fly Lab <https://www.sciencecourseware.org/FlyLabJS/>
- k) Biology Interactive Resources <https://www.biointeractive.org/classroom-resources>
- l) Online Macromolecular Museum <https://bit.ly/3YAQ1U0>
- m) Sumanas Multimedia Animations <https://bit.ly/3I1XRPj>
- n) Genetic Science Learning Center <https://learn.genetics.utah.edu/content/labs/>
- o) DNA Interactive <http://www.dnai.org/>
- p) DNA from the Beginning <http://www.dnafb.org/>
- q) Inside Cancer <http://www.insidecancer.org/>
- r) Your Genes Your Health <http://www.ygyh.org>
- s) Biology Animations <https://dnalc.cshl.edu/resources/animations/>
- t) Biology-Live <http://www.bio-alive.com/animations/biology.htm>
- u) Virtual Cell Animations <https://vcell.science/>
- v) Learn Genetics <https://learn.genetics.utah.edu/>
- w) Untamed Science <https://untamedscience.com/science-videos-list/>
- x) Pearson <https://untamedscience.com/pearson/>
- y) Biology <https://www.pearson.com/channels/biology>

NAVODAYA VIDYALAYA SAMITI,

CLASS: XII

SUBJECT: HISTORY

SUBJECT CODE: 027

Unit No	Name of The Chapter/ unit	Marks	Periods
01	1Bricks,BeadsandBones	25	15
	2Kings,FarmersandTowns		17
	3Kinship,CasteandClass		17
	4Thinkers,BeliefsandBuildings		12
02	5ThroughtheEyesofTravelers	25	12
	6Bhakti–SufiTraditions		15
	7AnImperialCapital:Vijayanagar		17
	8Peasants,ZamindarsandtheState		17
03	9ColonialismandTheCountryside	25	14
	10RebelsandtheRaj		14
04	11 Mahatma Gandhi and the Nationalist Movement		15
	12FramingtheConstitution		15
	MAPWORK	5	15
	TOTAL	80	195
	INTERNAL ASSESSMENT/PROJECTWORK	20	25
	GRANDTOTAL	100	220

MONTH	NO OF DAYS	NO OF PERIODS	Main Topic and Sub-Topics to be Covered	Activities/Projects/ Practical Experiments to be Held Specific Assessment Tool(s) (Suggested)
APRIL 2024	22	38	Bricks,BeadsandBones– The Harappan civilization 1. Beginnings. 2. Subsistence Strategies 3. Mohenjo-DaroaplannedUrbanCentre 4.TrackingSocialDifferences 5. FindingoutaboutCraftProduction 6.StrategiesforProcuringMaterials 7.Seals, Scripts, Weight. 8. AncientAuthority 9.TheEndof the Civilization 10. Discovering the Harappan Civilization 11.Problems ofpiecingtogether the Past	- Map practice of harappansites Harappan,Banawali,Kalibang Balakot,Rakhigarhi,Dholavira geshwar,Lothal,Mohenjodaro anh-udaro,Kotdiji - Quiz based on the knowledge oftopics. Historicaltrip,project guidelin allotmentof final topic for proje work.

			<p>Kings, Farmers and Towns – Early states and Economics (C. 600 BCE - 600 CE)</p> <ol style="list-style-type: none"> 1. Prinsep and Piyadas' 2. The Earliest States 3. An Early Empire 4. New Notions of Kingship 5. A changing Countryside 6. Towns and Trade 7. Back to basics: How are Inscriptions deciphered? 	<ul style="list-style-type: none"> - Map practice of early states and their capitals, quiz on kingdom and trade (mahajanpadas Vajji, Magadha, Kosala, K Panchala, Gandhara, Av Rajgir, Ujjain, Taxila, Varanasi) - Visit to near by history museum Map practice of mahajanpadas quiz on subtopics
<p>PWT/UT-1 26-29 April 2024</p>				
<p>JULY. 2024</p>	<p>26</p>	<p>44</p>	<p>Kinship, Caste and Class – Early Societies (C. 600 BCE - 600 CE)</p> <ol style="list-style-type: none"> 1. The critical edition of the Mahabharata 2. Kinship and marriage: Many rules and varied practices 3. Social differences: Within and beyond the framework of Caste 4. Beyond birth Resources and Status 5. Explaining social differences: A Social Contract 6. Handing Texts, Historians and the Mahabharata 7. A Dynamic Text 	<p>Performing of play based on the story Mahabharata</p>
			<p>Thinkers, Beliefs and Buildings Cultural Developments (C. 600 BCE - 600 CE)</p> <ol style="list-style-type: none"> 1. A glimpse of Sanchi. 2. The background: Sacrifices and Debates 3. Beyond worldly pleasure, The message of Mahavira 4. The Buddha and the quest for Enlightenment 5. The teachings of the Buddha 6. Followers of the Buddha 7. Stupas 8. "Discovering" Stupas, The faith of Amaravati and Sanchi 9. Sculpture 10. New Religious Traditions 11. Can we "SEE" everything? 	<p>Map practice of buddhist sites Visit of near by buddhist and puranic sites</p> <p>Planing and data collection for project work.</p> <p>Quiz based on buddism, jainism and puranic Hinduism</p>

		<p>Through the Eyes of Travelers Perception of Society (C. Tenth to seventeenth century) 1. Al-Biruni and the Kitab-ul Hind xiii) Ibn Battuta's Rahal xiv) Francois Bernier, A Doctor with a difference</p> <p>Making sense of an alien world, Al-Biruni and the Sanskrit tradition</p> <p>Ibn Battuta and the excitement of the unfamiliar Bernier and the "Degenerate East"</p> <p>Women, Slaves, Sati and Labourer's</p>	<p>Map practice of sites visited by Ibn Battuta</p> <p>Quiz on subtopics Conduct a group discussion on the account of medieval foreign Travellers</p>
<p>AUG 2024</p>	<p>22</p>	<p>Bhakti- Sufi Traditions Changes in Religious beliefs and devotional tests Eight to Eighteenth century) 1. A Mosaic of Religious beliefs and practices 2. Poems of Prayers: Early traditions of Bhakti 3. The Virasaiva Shaiv tradition in Karnataka 4. Religious ferment in North India 5. New Strands in the fabric of Islamic traditions 6. The Growth of Sufism 7. The Chishti's in the Subcontinent 8. New devotional paths dialogue and dissent Northern India 9. Reconstructing Histories of religious traditions</p>	<p>Map practice of temples and sufi shrines Quiz Visit of nearby temples and dargahs of sufi's</p>

			<p>An Imperial Capital: Vijayanagar (C. Fourteenth to Sixteenth Century)</p> <ol style="list-style-type: none"> 1. The discovery of Hampi. 2. Rayas, Nayakas and Sultans 3. Vijayanagara The Capital and its Environs 4. The Royal Centre 5. The Sacred Centre 6. Plotting Palaces, Temples and Bazaars 7. Questions in search of answers 	<p>Map practice, quiz, Observation of various cultural activities during autumn season</p>
			<p>Peasants, Zamindars and the State Agrarian Society and the Mughal Empire (C. Sixteenth–Seventeenth Centuries)</p> <ol style="list-style-type: none"> 1. Peasants and agricultural production 2. The village community 3. Women in agrarian society 4. Forests and Tribes 5. The Zamindars 6. Land revenue system 7. The flow of silver 8. The Ain-I-Akbari of Abul Fazeal 	<p>Map practice of the areas of Mughal era Quiz A survey of nearest village and tribal area</p>

PWT/UT-II (08/8/2024 TO 10/8/2024)

SEP 2024	17	32	<p>Colonialism and The Countryside Exploring Official Archives</p> <ol style="list-style-type: none"> 1. Bengal and the Zamindars 2. The Hoe and Plough 3. A Revolt in Countryside: The Bombay Deccan 4. The Deccan Riots Commission 	<p>Map practice, Quiz Collections and discussion of official reports</p>
			<p>Rebels and the Raj The Revolt of 1857 and its Representations</p> <ol style="list-style-type: none"> 1. Pattern of the Rebellion 2. Awadh in Revolt 3. What the Rebels wanted 4. Repression 5. Images of the Revolt <p>Mid Term Examination (23/09/2024 TO 04/10/2024)</p>	<p>Practice the map major centres of British power Quiz Skit on freedom struggle</p>

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

Oct. 2024	18	32	Mahatma Gandhi and the Nationalist Movement Civil Disobedience and Beyond 1. A Leader announces Himself 2. The making and unmaking of Non-cooperation. 3. The Salt Satyagraha: A Case Study 4. Quit India 5. The last Heroic days 6. Knowing Gandhi	- Map practice of major sites of Gandhian Movement - Skit on dandi satyagraha
NOV. 2024	20	36	Framing the Constitution The Beginning of a New Era 1. A Tumultuous time 2. The vision of the Constitution 3. Defining Rights 4. The Power of States 5. The Language of the nation.	Quiz on Indian constitution Mock parliament Data analysis and interpretation for project work MAPWORK
DECEMBER	INTERNAL ASSESSMENT/ PROJECT WORK			
R	REVISION			
	1st PRE – BOARD			
	04.12.2024 to 14.12.2024			
DECEMBER 2024/ JANUARY 2025 REVISION 2 nd PRE – BOARD (20.01.2025 to 30.01.2025) Annual Exam (15 Feb. 2025 onwards As per CBSE Schedule)				

NAVODAYA VIDYALAYA SAMITI

CLASS: XII

SUBJECT: GEOGRAPHY

SUB.CODE: 029

Sl. No.	NAME OF THE TEXTBOOKS/ UNITS/CHAPTERS	ALLOTTED MARKS	NUMBER OF PERIODS
1	Fundamentals of Human Geography	30	85
2	India- People and Economy	30	85
3	Practical Work in Geography – Part II	25+3+2= 30	40
4	Map Work from Fundamentals of Human Geography	5	5
5	Map work from India - People and Economy	5	5
	Total	100 Marks	220

Month	No. of days	No. of Periods	Main topic and subtopics to be covered	Activities/ practical projects
APRIL 2024	22 Days	38 Periods	<p><u>Fundamentals of Human Geography</u> Unit I</p> <ul style="list-style-type: none"> Human Geography Nature and Scope The World Population: Distribution, Density and Growth <p><u>India: People and Economy</u> Unit I</p> <ul style="list-style-type: none"> Population: Distribution, Density, Growth, and Composition <p><u>Fundamentals of Human Geography</u> Unit II & III</p> <ul style="list-style-type: none"> Human Development 	<p><u>Activity:</u> Debate & Discussion or Naturalization of Humans and Humanization of Nature.</p>
			<p>PWT/UT-1 (26/04/2024 TO 29/04/2024)</p>	

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

JULY 2024	26 Days	44 Periods	<p><u>Fundamentals of Human Geography</u> Unit II & III</p> <ul style="list-style-type: none"> Primary Activities <p><u>India: People and Economy</u> Unit I</p> <ul style="list-style-type: none"> Human Settlement <p><u>Fundamentals of Human Geography</u> Unit III</p> <ul style="list-style-type: none"> Secondary activities <p><u>India: People and Economy</u> Unit III</p> <ul style="list-style-type: none"> Land Resources and Agriculture 	<p><u>Practical Work in Geography II</u> Data – Its Source and Compilation</p>
AUGUST 2024 2	22 Days	38 Periods	<p><u>India: People and Economy</u> Unit III</p> <ul style="list-style-type: none"> Water Resources Minerals and Energy Resources <p><u>Fundamentals of Human Geography</u> Unit III</p> <ul style="list-style-type: none"> Tertiary and Quaternary Activities 	<p><u>Practical Work in Geography - II</u> Data Processing</p>
		PWT/UT-II (08/8/2024 TO 10/8/2024)		
SEPTEMBER 2024	17 Days	32 Periods	<p><u>India: People and Economy</u> Unit III</p> <ul style="list-style-type: none"> Planning and Sustainable Development in Indian Context <p>Unit IV</p> <ul style="list-style-type: none"> Transport and communication <p><u>Fundamentals of Human Geography</u> Unit III</p> <ul style="list-style-type: none"> Transport and Communication & Trade 	<p><u>Practical Work in Geography – II</u> Graphical Representation Of Data</p>
<p>Mid Term Examination (23/09/2024 TO 04/10/2024)</p>				

Perspective Academic Planning (PAP) Split-Up of Syllabus Session 2024-25

OCTOBER 2024	18 Days	32 Periods	<p><u>Fundamentals of Human Geography</u> Unit III</p> <ul style="list-style-type: none"> International Trade <p><u>India: People and Economy</u></p> <p>Unit IV</p> <ul style="list-style-type: none"> International Trade <p>Unit V</p> <ul style="list-style-type: none"> Geographical Perspective On Selected Issues and Problems 	<p><u>Practical Work in Geography – II</u> Spatial Information Technology</p>
NOVEMBER 2024	20	36	<p><u>India: People and Economy</u> Unit V</p> <ul style="list-style-type: none"> Geographical Perspective On Selected Issues and Problems <p>1. Map Work on identification of features based on 1-5 units on the outline Physical/Political map of World. 2. Map work on locating and labeling of features based on above units on outline map of India.</p>	
DECEMBER 2024	<p>INTERNAL ASSESSMENT/ PROJECT WORK REVISION 1st PRE – BOARD 04.12.2024 to 14.12.2024</p>			
<p>DECEMBER 2024/ JANUARY 2025 REVISION 2nd PRE – BOARD (20.01.2025 to 30.01.2025)</p>				

SUGGESTED CLASS ROOM ACTIVITIES: -

- GROUP DISCUSSION OR DEBATE
- MAP PRACTICE
- GRAPH AND DATA INTERPRETATION
- FOCUS ON LOCAL AREA RESOURCES & ENVIRONMENT
- OTHER RELEVANT ACTIVITIES

Note: Any changes in the syllabus, if announced by CBSE during the academic year 2024-25, have to be incorporated into the split-up syllabus by the concerned teachers and Principal accordingly. In this regard, Principals and teachers will always remain in touch with CBSE and its website. Art integrated activities must be integrated with the teaching-learning process.

***Number of periods mentioned here against each month is insufficient to complete the whole syllabus within the stipulated time. Extra classes are necessary.**

NAVODAYAVIDYALAYASAMITI

CLASS12

CLASS:12

SUBJECT:ECONOMICS

SUBJECTCODE:030

Units		Marks	Periods (As per CBSE)
PartA	IntroductoryMacroeconomics		
	NationalIncomeandRelatedAggregates	10	30
	MoneyandBanking	06	15
	DeterminationofIncomeandEmployment	12	30
	GovernmentBudgetandtheEconomy	06	17
	BalanceofPayments	06	18
		40	
PartB	IndianEconomicDevelopment		
	Development Experience (1947-90) and Economic Reforms since 1991	12	28
	CurrentChallengesfacingIndianEconomy	20	50
	Development Experience of India – A Comparison with Neighbors	08	12
		40	
	TheoryPaper(Total)	80	200
PartC	Project Work	20	20
	GrandTotal	100	220

Month	No.ofdays	No.ofPeriods	MainTopicandSubtopicstobecovered	Activities/Project s/ Practical/ Experiments to be held/Specific AssessmentTool(s) suggested.
APRIL2024	22	36	<p>Unit1:NationalIncomeandRelatedAggregates: What is Macroeconomics? Basic concepts in macroeconomics: Consumption goods, Capital goods,final goods, intermediate goods, stocks and flows, gross investmentand depreciation.</p> <p>Circular flow of income (two sector model), Methods of calculating National Income- Value Added or Product method, Expenditure method, Income method.</p> <p>Aggregates related to National Income: Gross National Product (GNP), Net National Product (NNP), Gross Domestic Product (GDP) and Net Domestic Product (NDP)-at market price, atfactor cost, Real and Nominal GDP. GDPandWelfare.</p> <p>Unit2:MoneyandBanking Money- meaning and functions, supply of money-Currencyheldbythe public and netdemand deposits held by commercial banks.</p> <p>UT-IEEXAMINATION26TO29APRIL,2024 <i>Syllabus:-Unit1</i></p>	<p>Quiz,mindmap, PPT presentation.</p> <p>Selectionoftopic for project work</p>
JULY2024	26	39	<p>Unit2:MoneyandBanking Money creation by thecommercial banking system. Central bankand itsfunctions (example of theReserveBankofIndia):Bankofissue,Govt.Bank,Ban ker’s Bank, Control ofCredit through Bank Rate,CRR, SLR, RepoRateandReverseRepoRate,OpenMarketOperatio ns, Margin requirement.</p> <p>Unit3:DeterminationofIncomeandEmployment Aggregatedemandanditscomponents Propensity to consume andPropensity to Save (averageand marginal). Short-run equilibriumoutput, investmentmultiplier and its mechanism. Meaning of full employment and involuntary unemployment. Problemsofexcessdemandanddeficientdemand,measur</p>	<p>Competitive basedquestion</p> <p>Case study on impact andeffect of Repo rate change</p> <p>Collection of material relateto project andreview ofliterature</p>

			es to correct them-changes in government spending,taxesandmoneysupply.	
AUGUST2024	22	35	<p>Unit 4: Government Budget and the Economy Government budget- meaning, objectives andcomponents. Classification of receipts-revenue receipts and capital receipts. Classification of expenditure-revenue expenditure and capital expenditure.</p> <p>Balanced,SurplusandDeficitBudget-measuresof government deficit.</p> <p>Unit5:BalanceOfPayments Balance of paymentsaccount-meaning andcomponents. Balance OfPayments-Surplus and Deficit Foreigntaxchangerate- meaningoffixedand flexiblerates and managed floating.</p> <p>Determination of exchangerate in a free market, Merits, anddemeritsofflexibleand fixedexchangerate.Managed Floating exchangerate system.</p> <p>UT-IIEXAMINATION08TO10AUGUST,2024</p>	<p>Debate Value based questions. Case study and Assertionquestion relates todeficit budget. Collection of dataforproject work</p>
			<i>SyllabusforUT-IIExam:-Unit2and3</i>	
SEPTEMBER2024	17	28	<p>Unit6:Development Experience(1947-90)andEconomicReformssince 1991: A briefintroduction ofthestate ofIndian economyonthe eve of independence. Indian economic system andcommon goals of Five-Year Plans. Main features, problems and policies of agriculture (institutional aspects and new agricultural strategy), industry(IPR 1956,SSI-roleandimportance)and foreign trade.</p> <p>RevisionforTerm1Examination TERM1EXAM23Septemberto04October,2024 <i>Syllabus for TERM - I Exam: - Units 1 to 6 the syllabus completed till the date</i></p>	<p>Analysisofproject data Debate, quiz Application oriented questions</p>
OCT OBE			<p>Unit7:CurrentChallengesfacingIndianEconomy Human Capital Formation: How people become</p>	<p>Findings, policy</p>

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

	18	30	resource, Role of human capital in economic development, Growth of Education Sector in India. Rural development: Key issues- credit and marketing- role of cooperatives, agricultural diversification, alternative farming- Organic farming Employment: Growth and changes in work force participation rate in formal and informal sectors, problems and policies.	recommendation and conclusion of project work Case study competitive based question MCQ
NOVEMBER 2024	20	32	Sustainable Economic Development: Meaning, Effects of Economic Development on Resources and Environment, including global warming. Unit 8: Development Experience of India: A comparison with neighbors India and Pakistan India and China Issues: economic growth, population, sectoral development and other Human Development Indicators.	Case study competitive based question MCQ Art integrated techniques
DECEMBER 2024	12	20	PREPARATION OF PROJECT WORK & Revision for Pre-Board-I Exam PRE-BOARD-I EXAM 04 TO 14 DEC. 2024 Revision for Pre-Board-II Exam	Practice of Sample Papers, Practice Tests
JANUARY 2025	14		Revision for Pre-Board-II Exam PRE-BOARD-II EXAM 20 TO 30 JAN. 2025	Practice of Sample Papers, Practice Tests
FEBRUARY 2025	22		PRACTICAL EXAMINATION OF CBSE And Revision for Annual Examination ANNUAL EXAMINATION 15 FEB. 2025 ONWARDS	Practice of Sample Papers, Practice Tests

SUGGESTED QUESTION PAPER PATTERN BY CBSE

Economics (Code No. 030)

Class XII (2024-25) Theory: 80 Marks 3 hrs.

Project: 20 Marks

SN	Typology of Questions	Marks	Percentage
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Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

1	Remembering and Understanding: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	44	55%
2	Applying: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	18	22.5%
3	Analyzing, Evaluating and Creating: Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	18	22.5%
	Total	80	100%

NAVODAYA VIDYALAYA SAMITI

CLASS XII (2024-25)

SUBJECT: ACCOUNTANCY (055)

Theory: 80 Marks

Time: 3 Hrs.

Project: 20 Marks

Part A: Accounting for Partnership Firms and Companies (60Marks)			
Units	Name of the Chapter/ Unit	Marks	Periods
Unit-1	Accounting for Partnership Firms	36	105
Unit 2.	Accounting for Companies	24	45
	Total	60	150
Part B: Financial Statement Analysis (20Marks)			
Unit 3.	Analysis of Financial Statements	12	30
Unit 4.	Cash Flow Statement	8	20
	Total	20	50
Part-C: Project Work (20Marks)			
	Project File	12	
	Viva Voce	08	
	Total	20	20
	Grand Total (A +B+C)	100	220

PART A: ACCOUNTING FOR PARTNERSHIP FIRMS AND COMPANIES

Month	No. of Days	No. of Periods	Main Topic and Subtopics to be covered	Activities/Projects/ Practical/ Experiments to be held/Specific Assessment Tools suggested
APRIL 2024	22	38	<p>Unit 1: Accounting for Partnership Firms:</p> <ul style="list-style-type: none"> Partnership: features, Partnership Deed, Provisions of the Indian Partnership Act 1932 in the absence of partnership deed. Fixed v/s fluctuating capital accounts. Preparation of Profit and Loss Appropriation account- division of profit among partners, guarantee of profits, - Past adjustments (relating to interest on capital, interest on drawing, salary and profit-sharing ratio). Goodwill: Meaning, nature, factors affecting, need for valuation and methods for calculation - average profit, super profit and capitalization, adjusted through partner's capital/current account. <p>Unit-2 Accounting for Partnership Firms Reconstitution:-</p> <p>-Change in profit sharing ratio among the existing partners - sacrificing ratio, gaining ratio, accounting for revaluation of assets and reassessment of liabilities and treatment of reserves, accumulated profits and losses. Preparation of revaluation account and Balance Sheet. Admission of a partner - Effect of admission of a partner on change in the profit-sharing ratio, treatment of goodwill (as per AS 26),</p> <p>UT – I EXAMINATION 26 TO 29 APRIL, 2024</p> <p><i>Syllabus for UT – I: Partnership: Fundamentals, Change in Profit Sharing Ratio</i></p>	<p>Role Play of students regarding formation of partnership and their agreement based on previous knowledge</p>
JULY 2024	26	42	<p>Admission of a partner - Treatment for revaluation of assets and reassessment of liabilities, treatment of reserves, accumulated profits and losses, adjustment of capital accounts and preparation of capital, current account and Balance Sheet</p>	<p>Different assignments can be given to the students to understand the topic through role play method, Quiz, Class Tests</p>

			<p>Retirement and Death of a Partner: effect of retirement/death of a partner on change in profit sharing ratio, treatment of goodwill (as per AS 26), treatment for revaluation of assets and reassessment of liabilities, adjustment of accumulated profits, losses and reserves, adjustment of capital accounts and preparation of capital, current account and balance sheet. Preparation of loan account of the retiring partner.</p> <ul style="list-style-type: none"> • Calculation of deceased partner's share of profit till the date of death. Preparation of deceased partner's capital account and his executor's account. 	
AUGUST 2024	22	40	<p>Dissolution of a Partnership firm: meaning of dissolution of partnership and partnership firm, types of dissolution of a firm. Settlement of accounts - preparation of realization account, and other related accounts: capital accounts of partners and cash/bank a/c (excluding piecemeal distribution, sale to a company and insolvency of partner(s)).</p> <p>Note: (i) If the realized value of tangible assets is not given it should be considered as realized at book value itself. (ii) If the realized value of intangible assets is not given it should be considered as nil (zero value). (iii) In case, the realization expenses are borne by a partner, clear indication should be given regarding the payment thereof.</p> <p>Unit-3 Accounting for Companies Accounting for Share Capital</p> <ul style="list-style-type: none"> • Features and types of companies • Share and share capital: nature and types. • Accounting for share capital: issue and allotment of equity and preferences shares. Public subscription of shares - over subscription and under subscription of shares; issued at par and at premium, calls in advance and arrears (excluding interest), issue of shares for consideration other than cash. <p>UT – II EXAMINATION 08 TO 10 AUG, 2024</p> <p><i>Syllabus for UT – II: Admission of a Partner</i></p>	<p>Different assignments can be given to the students to understand the topic through role play method, Quiz, Class Tests</p>

			and Retirement and Death of Partner	
SEPTEMBER 2024	17	30	<p>Accounting for Share Capital (cont.)</p> <ul style="list-style-type: none"> • Concept of Private Placement and Employee Stock Option Plan (ESOP), Sweat Equity. • Accounting treatment of forfeiture and reissue of shares. • Disclosure of share capital in the Balance Sheet of a company. <p>Accounting for Debentures</p> <ul style="list-style-type: none"> • Accounting for Debentures • Debentures: Meaning, types, Issue of debentures at par, at a premium and at a discount. Issue of debentures for consideration other than cash; Issue of debentures with terms of redemption, Debentures issued as collateral security-concept, interest on debentures (concept of TDS is excluded), Writing off discount / loss on issue of debentures. <p>Note: Discount or loss on issue of debentures to be written off in the year debentures are allotted from Security Premium Reserve (if it exists) and then from Statement of Profit and Loss as Finance Cost(AS-16)</p> <p>Revision for Term 1 Examination TERM 1 EXAM 23 September to 04 October, 2024 <i>Syllabus for Term – I Exam: Part A (Accounting for Partnership and Companies</i></p>	Different assignments can be given to the students to understand the topic through role play method, Quiz, Class Tests
OCTOBER 2024	18	24	<p>Unit-4 Analysis of Financial Statements:- (Part)</p> <p>Financial statements of a Company: Meaning, Nature, Uses and importance of financial Statement. Statement of Profit and Loss and Balance Sheet in prescribed form with major headings and sub headings (as per Schedule III to the Companies Act, 2013) Note: Exceptional items, extraordinary items and profit (loss) from discontinued operations are excluded.</p> <ul style="list-style-type: none"> • Financial Statement Analysis: Meaning, Significance, Objectives, importance and limitations. • Tools for Financial Statement Analysis: Cash flow analysis, ratio analysis. 	Different assignments can be given to the students to understand the topic through role play method, Quiz, Class Tests

			<p>Unit-4 Analysis of Financial Statements :- (Part) Accounting Ratios: Meaning, Objectives, Advantages, classification and computation. • Liquidity Ratios: Current ratio and Quick ratio. • Solvency Ratios: Debt to Equity Ratio, Total Asset to Debt Ratio, Proprietary Ratio and Interest Coverage Ratio. Debt to Capital Employed Ratio.</p>	
NOVEMBER 2024	20	26	<p>Unit-4 Analysis of Financial Statements :- (Part) Accounting Ratios: Activity Ratios: Inventory Turnover Ratio, Trade Receivables Turnover Ratio, Trade Payables Turnover Ratio, Fixed Asset Turnover Ratio, Net Asset Turnover Ratio and Working Capital Turnover Ratio. • Profitability Ratios: Gross Profit Ratio, Operating Ratio, Operating Profit Ratio, Net Profit Ratio and Return on Investment. NOTE: Net profit ratio is to be calculated on the basis of profit before and after tax Unit 5: Cash Flow Statement Meaning, objectives Benefits, Cash and Cash Equivalents, Classification of Activities and preparation (as per AS 3 (Revised) (Indirect Method only) Note: (i) Adjustments relating to depreciation and amortization, profit or loss on sale of assets is including investments, dividend (both final and interim) and tax. (ii) Bank overdraft and cash credit to be treated as short term borrowings. (iii) Current Investments to be taken as Marketable securities unless otherwise specified. Meaning, objectives Benefits, Cash and Cash Equivalents, Classification of Activities and preparation (as per AS 3 (Revised) (Indirect Method only) Note: Previous years' Proposed Dividend to be given effect, as prescribed in AS-4, Events occurring after the Balance Sheet date. Current years' Proposed Dividend will be</p>	<p>Different assignments can be given to the students to understand the topic through case-based questions, Quiz, Class Tests, Card based identification of different activities of Cash Flow Statement</p>

			accounted for in the next year after it is declared by the shareholders.	
DECEMBER 2024	12	20 P. Work	Revision for Pre-Board – I Exam PRE-BOARD – I EXAM 04 TO 14 DEC. 2024 Revision for Pre-Board – II Exam	Practice of Sample Papers, Practice Tests
JANUARY 2025	14		Revision for Pre-Board – II Exam PRE-BOARD – II EXAM 20 TO 30 JAN. 2025	Practice of Sample Papers, Practice Tests
FEBRUARY 2025	22		PRACTICAL EXAMINATION OF CBSE And Revision for Annual Examination	Practice of Sample Papers, Practice Tests

SUGGESTED QUESTION PAPER PATTERN BY CBSE

Accountancy (Code No. 055)

Class XII (2024-25) Theory: 80 Marks

3 hrs.

Project: 20 Marks

SN	Typology of Questions	Marks	Percentage
1	Remembering and Understanding: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	44	55%
2	Applying: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	19	23.75%
3	Analysing, Evaluating and Creating: Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	17	21.25%
	Total	80	100%

NAVODAYA VIDYALAYA SAMITI

CLASS: - XII (2024-25)

SUBJECT: BUSINESS STUDIES (054)

THEORY - 80 MARKS

TIME-3 HRS

PROJECT - 20 MARKS

Units		Periods	Marks
Part A	PRINCIPLES AND FUNCTIONS OF MANAGEMENT		
1	Nature and significance of Management	12	16
2	Principles of Management	14	
3	Business Environment	12	
4	Planning	14	14
5	Organizing	15	
6	Staffing	16	20
7	Directing	15	
8	Controlling	12	
TOTAL		110	50
Part B	BUSINESS FINANCE AND MARKETING		
1	Financial Management	20	15
2	Financial Markets	18	
3	Marketing	30	15
4	Consumer Protection	12	
TOTAL		80	30
Part C	Project Work (One)		
1	Project File		12
2	Viva		08
TOTAL		30	20

PART A: PRINCIPLES AND FUNCTIONS OF MANAGEMENT				
Month	No. of Days	No. of Periods	Main Topic and Subtopics to be covered	Activities/Projects/ Practical/ Experiments to be held/Specific Assessment Tools suggested
APRIL 2024	22	36	<p>Unit. 01 – Nature and significance of Management Management - Concept, objectives, and importance. Management as Science, Art and Profession Levels of Management Management functions-planning, organizing, staffing, directing and controlling - Coordination- concept and importance</p> <p>Unit. 02 – Principles of Management Principles of Management - Concept and significance Fayol’s principles of management Taylor’s Scientific management- principles and techniques</p> <p>Unit. 03 – Business Environment Business Environment - Concept and Importance. Dimensions of Business Environment-Economic, Social, Technological, Political and Legal</p> <p>UT – I EXAMINATION 26 TO 29 APRIL, 2024 <i>Syllabus for UT – I: Nature and Significance of Management, Principles of Management</i></p>	<p>Project work, Quiz, Mind map, Class Tests, Crossword Puzzles, Case Studies, Role Play</p>
JULY 2024	26	42	<p>Unit. 03 – Business Environment Demonetization - concept and features</p> <p>Unit. 04 – Planning Concept, importance and limitation Planning process Single use and standing plans. Objectives, Strategy, Policy, Procedure, method Rule, budget and Programme</p> <p>Unit. 05 – Organizing Organizing - Concept and importance Organizing process Structure of organization- functional and divisional concept. Formal and informal organization- concept Delegation: concept, elements and importance Decentralization: concept and Importance</p> <p>Unit. 06 – Staffing Concept and importance, Staffing as a part of Human Resource Management concept, Staffing Process, Recruitment Process, sources</p>	<p>Quiz, Mind map, Class Tests, Crossword Puzzles, Case Studies, Role Play</p>

AUGUST 2024	22	33	<p>Staffing (continuation) Selection Process, Training and Development - Concept and importance, Methods of training - on the job and off the job - vestibule training, apprenticeship training and internship training</p> <p>Unit. 07 – Directing Concepts and importance Elements of directing Motivation - concept, Maslow’s hierarchy of needs, Financial and non-financial incentives Leadership - concept, styles - authoritative, democratic and laissez faire Communication - concept, formal and informal communication; barriers to effective communication, how to overcome the barriers</p> <p>Unit. 08 – Controlling Concept and importance, Relationship between planning and controlling, Steps in process of control</p> <p>UT – II EXAMINATION 08 TO 10 AUG, 2024 <i>Syllabus for UT – II: Business Environment, Planning and Organising</i></p>	<p>Quiz, Mind map, Class Tests, Crossword Puzzles, Case Studies, Role Play</p>
SEPTEMBER 2024	17	22+ 5 P. Work	<p>Unit. 08 – Controlling Relationship between planning and controlling, Steps in process of control</p> <p>Unit. 09 – Financial Management Concept, role and objectives of Financial Management Financial decisions: investment, financing and dividend- Meaning and factors affecting Financial Planning - concept and Importance Capital Structure – concept and factors affecting capital structure</p> <p>Revision for Term 1 Examination TERM 1 EXAM 23 September to 04 October, 2024 <i>Syllabus for Term – I Exam: Nature and Significance of Management to Controlling</i></p>	<p>Quiz, Mind map, Class Tests, Crossword Puzzles, Case Studies, Role Play</p>
OCTOBER 2024	18	32	<p>Unit. 09 – Financial Management Fixed and Working Capital - Concept and factors affecting their requirements</p> <p>Unit. 10 – Financial Markets Financial Markets: Concept Money Markets: Concept Capital market and its types (primary and secondary) Stock Exchange - Functions and trading procedure</p>	<p>Project work, Quiz, Mind map, Class Tests, Crossword Puzzles, Case Studies, Role Play</p>

			Securities and Exchange Board of India (SEBI) - objectives and functions Unit. 10 – Marketing Marketing – Concept, functions and philosophies Marketing Mix – Concept and elements Product - branding, labelling and packaging – Concept	
NOVEMBER 2024	20	35	Unit. 10 – Marketing Price - Concept, Factors determining price Physical Distribution – concept, components and channels of distribution Promotion – Concept and elements; Advertising, Personal Selling, Sales Promotion and Public Relations Unit. 10 – Consumer Protection Concept and importance of consumer protection The Consumer Protection Act, 2019:Source: http://egazette.nic.in/WriteReadData/2019/210422.pdf Meaning of consumer, Rights and responsibilities of consumers, who can file a complaint? Redressal machinery, Remedies available Consumer awareness - Role of consumer organizations and Non-Governmental Organizations (NGOs)	Project work, Quiz, Mind map, Class Tests, Crossword Puzzles, Case Studies, Role Play
DECEMBER 2024	12		Revision for Pre-Board – I Exam PRE-BOARD – I EXAM 04 TO 14 DEC. 2024 Revision for Pre-Board – II Exam	Practice of Sample Papers and Practice Tests
JANUARY 2025	14		Revision for Pre-Board – II Exam PRE-BOARD – II EXAM 20 TO 30 JAN. 2025	Practice of Sample Papers and Practice Tests
FEBRUARY 2025	22		PRACTICAL EXAMINATION OF CBSE And Revision for Annual Examination ANNUAL EXAMINATION 15 FEB. 2025 ONWARDS	Practice of Sample Papers and Practice Tests

**SUGGESTED QUESTION PAPER PATTERN BY CBSE
Business Studies (Code No. 054)**

Class XII (2024-25)

Theory: 80 Marks

Project: 20 Marks

SN	Typology of Questions	Marks	Percentage
01	Remembering and Understanding: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	44	55%
02	Applying: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way	19	23.75%
03	Analyzing, Evaluating and Creating: Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	17	21.25%
	Total	80	100%

NOTE: - Any change in the syllabus, if announced by the CBSE during the academic year 2023-24, has to be incorporated in the split-up syllabus by the concerned teachers accordingly. In this regard Teachers are requested to be in touch with the CBSE website.

NAVODAYA VIDYALAYA SAMITI,
CLASS : XII SUBJECT : COMPUTER SCIENCE

MAX. MARKS: 100 (70 Theory + 30 Practical)
Distribution of Marks and Periods

Unit No	Name of The Chapter/ unit	Marks	Periods	
			THEORY	PRACTICALS
I	Computational Thinking and Programming - 2	40	70	50
II	Computer Networks	10	15	—
III	Database Management	20	25	20
	Total	70	110	70
	Practicals	30		
	Grand Total	100	110	70

Month.	No. of Days	No. of periods	of Marks for Unit/Chant	Units/Subunits/Topics/Chapters to be Covered	Details of Activity/Practical/Projects
April	22	17T+13P	40 MARKS	<p>UNIT : 1 Revision of Python topics covered in Class XI.</p> <p>Functions:</p> <ul style="list-style-type: none"> • types of function (built-in functions, • functions defined in module, • user defined functions), • creating user defined function, • arguments and parameters, • default parameters, • positional parameters, • function returning value(s), • flow of execution, • scope of a variable (global scope, local scope) 	Revision of all concepts of Python programming taught in class XI i.e. Strings, Conditional statements, iterative statement, list, tuples, dictionaries and Predefined functions in random module, math module etc Python programs to implement Functions, passing parameters and returning values.
PWT-01/UT- 01 (26-29 APRIL 2024)					

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

Month.	No. of Days	No. of periods	of Marks for Unit/Chant	Units/Subunits/Topics/Chapters to be Covered	Details of Activity/Practical/Projects
JULY	27	16T + 14 P		<p>Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths</p> <p>Text file: opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause, writing/appending data to a text file using write() and writelines(), reading from a text file using read(), readline() and readlines(), seek and tell methods, manipulation of data in a text file</p>	Python programs to open and close the file, read write and append to a file. Python program to implement text files and binary files. Projects can be assigned with data file handling.
AUGUST	22	16T + 14 P		<p>Introduction to files (Continued...)</p> <ul style="list-style-type: none"> Binary file: basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append and update operations in a binary file. CSV file: import csv module, open / close csv file, write into a csv file using csv.writer() and read from a csv file using csv.reader() 	Python programs to implement Binary file. Python programs to implement Stack using lists
PWT-02/ UT- 02 (08-10 AUG 2024)					

Month.	No. of Days	No. of periods	of Marks for Unit/Chant	Units/Subunits/Topics/Chapters to be Covered	Details of Activity/Practical/Projects
SEPTEMBER		18T+10P	10 MARKS	<p>Data Structure:</p> <ul style="list-style-type: none"> Stack, operations on stack (push & pop), implementation of stack using list. <p>Unit II: Computer Networks</p> <ul style="list-style-type: none"> 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), Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card) 	<p>Python programs to implement CSV file.</p> <p>Different Devices used in networking can be shown to the students.</p> <p>Network topologies implemented in the school can be described.</p>
MID TERM (23 SEPT TO 04 OCT 2024)					

Month.	No. of Days	No. of periods	Marks for Unit/Chant	Units/Subunits/Topics/Chapters to be Covered	Details of Activity/Practical/Projects
OCTOBER	22	20T+13P	20 MARKS	<p>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</p> <p>Unit III: Database Management Database concepts:</p> <ul style="list-style-type: none"> • introduction to database concepts and its need • Relational data 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, 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, relational and logical), • aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete Command. 	<p>Hands on Networking and various type of topology Installation of Mysql and hands on practicals on various queries on DDL and DML commands. Demonstrating the students to install a suitable connector for connecting databases with python. Projects can be assigned to students to implement applications mentioned in the practical section below.</p>

Month.	No. of Days	No. of periods	of Marks for Unit/Chant	Units/Subunits/Topics/Chapters to be Covered	Details of Activity/Practical/Projects
NOVEMBER	26	18T+10P		Unit III: Database Management Database concepts: (Continued.....) 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	Programs on connecting python with sql and executing the queries through python programs and printing the result with various fetch methods.
DECEMBER Revision, Project Work Preparation & I Pre Board Examination					
JANUARY Revision, Finalisation of Project & II Pre Board Examination					
FEBRUARY Revision, CBSE Practical Examination					
MARCH - APRIL CBSE Board Examination					

Practical

S.No	Unit Name	Marks (Total=30)
1	Lab Test: 1. Python program (60% logic + 20% documentation + 20% code quality)	8
	2. SQL queries (4 queries based on one or two tables)	4
2	Report file: <ul style="list-style-type: none"> ● Minimum 15 Python programs. ● SQL Queries – Minimum 5 sets using one table / two tables. ● Minimum 4 programs based on Python - SQL connectivity 	7
3	Project (using concepts learnt in Classes 11 and 12)	8
4	Viva voce	3

Suggested Practical List:
Python Programming

- Read a text file line by line and display each word separated by a #.
- Read a text file and display the number of vowels/consonants/uppercase/lowercase characters in the file.
- Remove all the lines that contain the character 'a' in a file and write it to another file.
- Create a binary file with name and roll number. Search for a given roll number and display the name, if not found display appropriate message.
- Create a binary file with roll number, name and marks. Input a roll number and update the marks.
- Write a random number generator that generates random numbers between 1 and 6 (simulates a dice).
- Write a Python program to implement a stack using list.
- Create a CSV file by entering user-id and password, read and search the password for given user id.

Database Management

- Create a student table and insert data.

Implement the following SQL commands on the student table:

- ALTER table to add new attributes / modify data type / drop attribute
- UPDATE table to modify data
- ORDER By to display data in ascending / descending order
- DELETE to remove tuple(s)
- GROUP BY and find the min, max, sum, count and average
- Similar exercises may be framed for other cases.
- Integrate SQL with Python by importing a suitable module.

Suggested Reading Material

- NCERT Textbook for COMPUTER SCIENCE (Class XII)
- Support Materials on the CBSE website.

Project

- The aim of the class project is to create something that is tangible and useful using Python file handling/ Python-SQL connectivity. This should be done in groups of two to three students and should be started by students at least 6 months before the submission deadline. The aim here is to find a real world problem that is worthwhile to solve. Students are encouraged to visit local businesses and ask them about the problems that they are facing. For example, if a business is finding it hard to create invoices for filing GST claims, then students can do a project that takes the raw data (list of transactions), groups the transactions by category, accounts for the GST tax rates, and creates invoices in the appropriate format. Students can be extremely creative here. They can use a wide variety of Python libraries to create user friendly applications such as games, software for their school, software for their disabled fellow students, and mobile applications, of course to do some of these projects, some additional learning is required; this should be encouraged. Students should know how to teach themselves. The students should be

sensitised to avoid plagiarism and violations of copyright issues while working on projects. Teachers should take necessary measures for this.

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NAVODAYA VIDYALAYA SAMITI,
CLASS : XII SUBJECT : INFORMATICS PRACTICES

MAX. MARKS: 100 (70 Theory + 30 Practical)					
Distribution of Marks and Periods					
Unit No	Unit Name	Marks		Periods	
		Theory	Theory	Practical	Total
1	Data Handling using Pandas and Data Visualization	25	25	25	50
2	Database Query using SQL	25	20	17	37
3	Introduction to Computer Networks	10	12	0	12
4	Societal Impacts	10	14	–	14
Project		–	–	7	7
Practical		30	–	–	–
TOTAL		100	71	49	120

Month.	No. of Days	No. of periods	Weightage of Marks for Unit/Chapter	Units/Subunits/Topics/Chapters to be Covered	Details of Activity/Practical/Projects
April	22	18T+10P	25 MARKS	<p>Unit 1: Data Handling using Pandas and Data Visualization</p> <p>Data Handling using Pandas – I</p> <ul style="list-style-type: none"> • Introduction to Python libraries – Pandas, Matplotlib. • Data Structures in Pandas – Series and DataFrames • Series: Creation of Series from ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing, and Slicing. 	<p>Practice of topics and Practical programs.</p> <p>Activities as specified in NCERT Textbook.</p>
PWT-01/UT- 01 (26-29 APRIL 2024)					

JULY	27	10T+16P	CONTINUE	<p>4. Data Frames: creation – from the dictionary of Series,</p> <p>5. list of dictionaries, Text / CSV files; display; iteration;</p> <p>6. Operations on rows and columns: add, select, delete, rename;</p> <p>7. Head and Tail functions; Indexing using Labels, Boolean Indexing.</p>	The practice of topics and Practical programs. Activities as specified in NCERT Textbook.
AUGUST	22	16T+12P	25 MARKS	<ul style="list-style-type: none"> Importing / Exporting Data between CSV files and DataFrames. <p>Data Visualization</p> <ul style="list-style-type: none"> Purpose of plotting; drawing and saving the following types of plots using Matplotlib – lineplot, bargraph, and histogram. Customizing plots: adding labels, titles, and legend in plots. <p>Unit 2: Database Query using SQL</p> <ul style="list-style-type: none"> Math functions: POWER(), ROUND(), MOD() Text functions: UCASE() / UPPER(), LCASE() / LOWER(), MID() / SUBSTRING() / SUBSTR(), LENGTH(), LEFT(), RIGHT(), INSTR(), LTRIM(), RTRIM(), TRIM(). Date Functions: NOW(), DATE(), MONTH(), MONTHNAME(), YEAR(), DAY(), DAYNAME(). 	The practice of topics and Practical programs and SQL.
PWT-02/ UT- 02 (08-10 AUG 2024)					
SEPTEMBER		10T+16P	CONTINUE.	<ul style="list-style-type: none"> Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*). Querying and manipulating data using Groupby, Having, and Order by clauses. 	The practice of topics and Practical programs and SQL.
MID TERM (23 SEPT TO 04 OCT 2024)					

OCTOBER	22	20T+08P	10 MARKS	<p>Unit 3: Introduction to Computer Networks</p> <ul style="list-style-type: none"> • Introduction to networks, Types of networks: LAN, MAN, WAN • Network Devices: modem, hub, switch, repeater, router, gateway • Network Topologies: Star, Bus, Tree, Mesh • Introduction to Internet, URL, WWW, and its applications – Web, email, Chat, VoIP. • Website: Introduction, the difference between a website and webpage, static vs dynamic web page, web server, and hosting of a website. • Web Browsers: Introduction, commonly used browsers, browser settings, add-ons, plug-ins, cookies. 	Activities as specified in the NCERT Textbook
NOVEMBER	26	20T+08P	10 MARKS	<p>Unit 4: Societal Impacts</p> <p>1. Digital footprint, net, and communication etiquettes, data protection, intellectual property rights (IPR)</p> <ul style="list-style-type: none"> • plagiarism, licensing and copyright, free and open-source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyberbullying, an overview of the Indian IT Act. • E-waste: hazards and management. • Awareness about health concerns related to the usage of technology. 	<p>Practical on MySQL functions Browsers and Websites</p> <p>Project Work</p>
DECEMBER Revision, Project Work Preparation & I Pre Board Examination					
JANUARY Revision, Finalisation of Project & II Pre Board Examination					
FEBRUARY Revision, CBSE Practical Examination					
MARCH - APRIL CBSE Board Examination					

Practical

S.No.	Unit Name	Marks
1	Programs using Pandas and Matplotlib	8
2	SQL Queries	7

3	Practical file (minimum of 15 programs based on Pandas, 4 based on Matplotlib, and 15 SQL queries mustbe included)	5
4	Project Work (using concepts learned in classes XI and XII)	5
5	Viva–Voce	5
	Total	30

Suggested Practical List

Data Handling

1. Create a panda's series from a dictionary of values and a ndarray
2. Given a Series, print all the elements that are above the 75th percentile.
3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per category.
4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions
5. Filter out rows based on different criteria such as duplicate rows.
6. Importing and exporting data between pandas and CSV file

Visualization

1. Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise.
2. For the Data frames created above, analyze, and plot appropriate charts with title and legend.
3. Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.

Data Management

1. Create a student table with the student id, name, and marks as attributes where the student id is the primary key.
2. Insert the details of a new student in the above table.
3. Delete the details of a student in the above table.
4. Use the select command to get the details of the students with marks more than 80.
5. Find the min, max, sum, and average of the marks in a student marks table.
6. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by.

7. Write a SQL query to order the (student ID, marks) table in descending order of the marks.

Project Work

The class project aims to create tangible and useful IT applications. The learner may identify a real-world problem by exploring the environment. E.g., Students can visit shops/business places, communities, or other

organizations in their localities and inquire about the organization's functioning and how data are generated, stored, and managed.

The learner can take data stored in CSV or database files, analyse using Python libraries, and generate appropriate charts to visualize.

If an organization maintains data offline, the learner should create a database using MySQL and store the data in tables. Data can be imported into Pandas for analysis and visualization.

Learners can use Python libraries of their choice to develop software for their school or any other social good.

Learners should be sensitized to avoid plagiarism and violation of copyright issues while working on projects. Teachers should take the necessary measures for this. Any resources (data, images, etc.) used in the project must be suitably referenced.

The project can be done individually or in groups of 2 to 3 students. Students should start the project at least 6 months before the submission deadline.

Note:

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NAVODAYAVIDYALAYASAMITI

CLASS: XII (2024-25)

COURSE STRUCTURE

SUBJECT: BIOTECHNOLOGY SUBJECT CODE: 045

One Paper

Max. Marks: 70+30

Time: 3 hrs.

Unit No	Name of The Chapter/ unit	Marks	Periods
UNIT-V Protein and Gene Manipulation	CHAPTER1: Recombinant DNATechnology	10	25
	CHAPTER2: Protein Structure and Engineering	14	25
	CHAPTER3: Genomics, Proteomics and Bioinformatics	16	28
UNIT-VI Cell Culture and Genetic Manipulation	CHAPTER4 : Microbial Cell Culture and its Applications	8	25
	CHAPTER5: Plant Cell Culture and Applications	12	18
	CHAPTER6: Animal Cell Culture and Applications	10	15
	Practical	30	Two Periods Per Week
	TOTAL	100	136

SUBJECT: BIOTECHNOLOGY (Theory)

CLASS-XII SUBJECT CODE: 045

One Paper Time: 3 hrs. Max. Marks: 70

Month	No. Of Days	No. Period	Units/Subunits/Chapters/topics/ to be covered	Details of practical/project to be given	Spotters /Activities	Tests/ Assignments
APRIL 2024	22	22+6=28	<p>Unit V: Protein and Gene Manipulation Chapter 1: Recombinant DNA Technology Introduction, tools of Recombinant DNA technology, Making rDNA molecule, Introduction of recombinant DNA into host cells, Identification of recombinants, Polymerase Chain Reaction (PCR), DNA sequencing.</p>	1. Use of special equipment in biotechnology experiments. 2. Isolation of bacterial plasmid DNA		UT-1
JULY 2024	26	26+8=34	<p>Chapter-2: Protein Structure and Engineering Introduction to the world of proteins, Structure-function, Relationship in proteins, Characterization of proteins, Protein based products, Designing proteins (Protein Engineering).</p>	<ul style="list-style-type: none"> ➤ Detection of DNA by gel electrophoresis ➤ Estimation of DNA by UV-Spectroscopy 	<ul style="list-style-type: none"> ❖ Test the presence of proteins. ❖ Estimate the amount of proteins in plant and animal samples. 	
AUGUST 2024	22	22+6=28	<p>Chapter 3. Genomics, Proteomics and Bioinformatics Gene prediction and counting, Genome similarity, SNPs and Comparative genomics, Functional genomics, Proteomics, Information sources, Analysis using bioinformatics tools.</p>	<ul style="list-style-type: none"> ➤ Reading of a DNA sequencing gel to arrive at the sequence. ➤ 	<ul style="list-style-type: none"> ❖ Prepare a list of the scope of stem cell technology. 	UT-2

Month	No. Of Days	No. Period	Units/Subunits/Chapters/topics/ to be covered	Details of practical/ project to be given	Spotters /Activities	Tests/ Assignments
SEPTEMBER 2024	17	17+5=22	Unit VI: Cell Culture and Genetic Manipulation Chapter 4: Microbial Cell Culture and its Applications Introduction, Microbial nutrition and culture techniques, Measurement and kinetics of microbial growth, Isolation of microbial products, Strain isolation and improvement, Applications of microbial culture technology.	<ul style="list-style-type: none"> ➤ Cell viability assay using Evan's blue dye exclusion method. ➤ Isolation of bacteria from curd & staining of bacteria 		MID-TERM (TERM-I)
OCTOBER 2024	18	18+6=24	Chapter 5: Plant Cell Culture and Applications Introduction, Cell and tissue culture techniques, Applications of cell and tissue culture, Gene transfer methods in plants, Transgenic plants with beneficial traits, Biosafety of transgenic plants.	<ul style="list-style-type: none"> ➤ Project work 		
NOVEMBER 2024	20	20+6=26	Chapter 6: Animal Cell Culture and Applications Introduction, Animal cell culture techniques, Applications of animal cell culture, Stem cell technology.			
DECEMBER 2024	10	10+2=12	DECEMBER 2024: Revision, Practicetest and PRE-BOARD-I			PB-I
JANUARY 2025	05	05+02=07	JANUARY 2025: Revision, Practicetest, and PRE-BOARD-II			PB-II

Perspective Academic Planning (PAP) Spilt-Up of Syllabus Session 2024-25

Month	No. Of Days	No. Period	Units/Subunits/Chapters/topics/ to be covered	Details of practical/ project to be given	Spotters /Activities	Tests/ Assignments
FEBRUARY 2025	12	12+4=16	FEBRUARY 2025: Revision, Practicetest and CBSE ANNUAL EXAM (From 15 Feb 2025 onwards as per CBSE Schedule)			CBSE ANNUAL EXAM

PRACTICALS 30 Marks

Note: Every student will be required to do the following experiments during the academic session.

1. Use of special equipment in biotechnology experiments
2. Isolation of bacterial plasmid DNA
3. Detection of DNA by gel electrophoresis
4. Estimation of DNA by UV spectroscopy
5. Isolation of bacteria from curd & staining of bacteria
6. Cell viability assay using Evan's blue dye exclusion method
7. Data retrieval and database search using internet site NCBI and download a DNA and protein sequence from internet, analyze it and comment on it
8. Reading of a DNA sequencing gel to arrive at the sequence
9. Project work

Scheme of Evaluation

Time: 3 Hours

Max. Marks 30

The scheme of evaluation at the end of the session will be as under:

A	Two experiments	6+6 (only one computer based practical)
	Practical record	04
	Viva on Practical	04
B	Project work	
	Write up	05
	Viva on project	05

	Total	30
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Note: -More emphasis should be given on hands on work in projects. Prescribed Books:

1. A Text Book of Biotechnology -Class XI: Published by CBSE, New Delhi
2. A reference- Biotechnology-Class XI: Published by NCERT, New Delhi
3. A Laboratory Manual of Biotechnology -Class XI: Published by CBSE, New Delhi
4. A Text Book of Biotechnology-Class XII: Published by CBSE, New Delhi
5. A Laboratory Manual of Biotechnology-Class XII: Published by CBSE, New Delhi